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Original Articles for January, 1958

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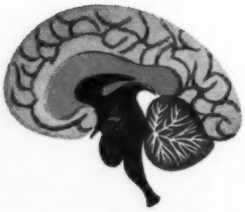

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EDITORIAL

Complications of Antibacterial Therapy

A drug so potent as to alter bacterial growth in the host automatically sets the stage for superinfection with resistant organisms

JAMES M. NORTHINGTON, M.D., *Editor*

One need not join in the silly chorus about "miracle drugs" to credit the sulfonamides and antibiotics as far the greatest of curative therapeutic agents. However, as is almost universally the case, these agents so potent for good are also potent for evil—and constantly become more so, as more and more persons become sensitized to them.

An account of these maleficent actions and means of avoiding or ameliorating them as well set forth by Eastman,[1] is abstracted and made the basis of this editorial.

Toxic effects are:

1. Purely allergic phenomena — rashes, urticaria, fever, serum sickness, anaphylaxis, and polyarteritis.
2. Toxic and metabolic effects—8th nerve damage from streptomycin and negative nitrogen balance from oxytetracycline.
3. The ill effects following disturbances of normal human bacterial flora.

PENICILLIN

Most reactions to penicillin are allergic. They occur in 4% of patients. They are most common with its topical, least common with its oral use. Use of penicillin lozenges has been almost completely abandoned. Sensitization may exist without known exposure to penicillin. In

1. Eastman, G., *New York J. Med.*, 57:3119-3124, 1957.

a large series, incidence of reactions was 2.7% for penicillin in oil and beeswax, 1.4% for aqueous penicillin, dosage is a factor. A reaction rate to benzathine penicillin 5.21% if in a single dose of 1,200,000 units; to a single dose of 600,000 units, 2.10% have reactions. With 500,000 units of oral penicillin daily for 10 days, 1.07% develop reactions. In the majority of instances penicillin itself is the allergen, rather than what is given with it.

Reactions most often are skin eruptions, usually urticarial or maculopapular. Rarely these go on to acute exfoliative dermatitis which may be fatal. Contact dermatitis in those handling the drug (nurses, for example) is common. Serum-sickness type of reactions are being seen with increasing frequency, manifested by fever, swollen, painful joints, and muscular aching. There is no real clinical difference between this syndrome and "serum sickness" from other causes. In addition, angioneurotic edema, asthma, drug fever, and periarteritis have all been reported as complications of therapy with penicillin.

The anaphylactoid are far the most dangerous of allergic reactions to penicillin, the cases reported probably represent only a fraction of the total number.

Intradermal skin testing prior to penicillin administration is now carried out in many hospitals. Less than 100 units of penicillin are used in the testing. Skin testing does not eliminate delayed penicillin reactions. A patient reacting to one type of penicillin must be assumed to be capable of reacting to any other. The use of antihistamines coincident with penicillin therapy is also of little value in reducing the incidence of reactions.

Local pain and soreness at the site occurs in 12% of patients receiving aqueous penicillin, and in a third of those receiving repository preparations. Occasionally the accidental injection of procaine penicillin intravenously causes grave trouble. The intrathecal injection of aqueous crystalline penicillin in doses not exceeding 20,000 units in a concentration of 1,000 units per ml. is relatively safe. Injection of larger amounts or of any preparation other than aqueous crystalline causes severe meningeal reactions with lasting sequelae.

The treatment of penicillin reactions, except for anaphylaxis, is largely symptomatic. At the first indication of asthmatic breathing, giant urticaria, or shock, 0.1 to 0.5 cc. of epinephrine must be given intravenously or subcutaneously. Oxygen, if necessary. Many advocate the simultaneous use of antihistamines parenterally. If the injection has been given in the arm, a tourniquet should be applied proximally to delay absorption. In the serum sickness type of reaction aspirin and antihistamines are useful. Use of adrenal cortical steroids is justifiable if the reaction is severe or prolonged. With long-acting penicillins sensitivity reactions will persist as long as the drug continues to be absorbed. In the case of benzathine penicillin this may be for many weeks.

STREPTOMYCIN AND DIHYDROSTREPTOMYCIN

Reactions to these drugs are more purely toxic than allergic—neurotoxicity, renal damage, local irrita-

tive effects, and 8th cranial nerve damage. After four months of 1.0 Gm. per day of intramuscular streptomycin, 28% of cases will show evidences of neurotoxicity; on 2.0 Gm. per day for two months, 63% will sustain such damage; on 2.0 Gm. per day for four months, 80%. There are wide individual variations; a few patients have neurotoxicity after a week of therapy; others not until after six months. Almost all neurotoxicity due to streptomycin is vestibular—with vertigo, giddiness, nausea, and disturbances of gait and balance. These symptoms are acute for a week or two, then subside as the patient is able to compensate visually for this defect. Eventually there may be some return of vestibular function in a few patients. With dihydrostreptomycin, perceptive deafness is produced more commonly, and vestibular troubles are unexpected. A few improve with drug withdrawal, but in many hearing losses are severe and permanent.

Most renal effects of streptomycin are minimal. Significant renal damage with disturbances in urea clearance, phenosulphonphthalein excretion or rise in nonprotein nitrogen, are seen in only 1 or 2% of cases.

PARA-AMINOSALICYLIC ACID

Intolerance to PAS in tuberculous patients is rather common, mainly gastrointestinal upsets, usually mild and generally improving with omission of the drug for a few days and resumption at a lower dosage. A switch in brand of preparation may solve the problem. Very uncommon are truly allergic reactions. Drug fever and rashes have been described as occurring between the third and fourth week of therapy. Bone marrow depression with leukopenia or thrombocytopenia and a few cases of Loeffler's syndrome due to PAS have been reported.

THE TETRACYCLINES, CHLORAMPHENICOL, AND ERYTHROMYCIN

The broad-spectrum antibiotics and erythromycin have many undesirable side-effects in common.

Dermatitis, occasionally seen after chloramphenicol, is infrequent after chlortetracycline, very rare following use of the newer tetracyclines. Anaphylactoid reactions have followed chloramphenicol, not tetracyclines or erythromycin—only four reports of cutaneous toxic reactions to erythromycin.

Nausea and vomiting occurred in only 1.35% of cases from erythromycin. Diarrhea in 19% from oxytetracycline, in 10% from chlortetracycline, in only 5% tetracycline from hydrochloride. B-complex vitamins have not been curative, although it is stated that oral reactions are less severe when vitamins are given. Frequently superinfection with *S. aureus* produces severe stomatitis and pharyngitis following use of these drugs.

Reports of liver damage rarely follow use of the tetracyclines or chloramphenicol. The bone-marrow depression following chloramphenicol has received great publicity, much of it undeserved. It is certain that this drug is capable of producing aplastic anemia, agranulocytosis, or thrombocytopenia. Larger doses or for longer periods increase the hazard. It is still necessary to exercise caution in its use.

SULFONAMIDES

Reports of undesirable side-effects from these drugs are exaggerated.

Yow's experience with 1,000 cases treated with sulfisoxazole encountered no examples of serious renal toxicity or agranulocytosis. Leukopenia is seen, but reverses after drug withdrawal. The frequency of skin rash is greater than that seen with the tetracyclines, but much less than that seen with penicillin or streptomycin.

BACITRACIN AND POLYMYXIN B

Bacitracin topically is quite safe. Systemic administration is reserved for infections in which other and less toxic drugs are ineffective.

Polymyxin B is similar to bacitracin in its toxic properties.

SUPERINFECTIONS

Superinfection with overgrowth of organisms not susceptible to a drug or drugs being used in a given patient is frequently produced specifically by antibacterial therapy. In general, the wider the antibacterial spectrum of a drug, the more frequently superinfection occurs. Superinfection, rare in sulfonamide therapy, occurs in only 1.4% after use of penicillin. Figures reported are for streptomycin as many as 13%, for chloramphenicol 15%, for the tetracyclines 10%. The "prophylactic" use is most apt to produce the syndrome. In Weinstein's series of 165 cases of poliomyelitis the incidence of secondary infection was 53% in cases receiving drugs prophylactically; 16% in the remainder. When secondary infection occurs in patients receiving prophylactic antibiotics, it is often with unusual or drug-resistant organisms.

COMMENT

No drug is completely free of these effects, nor is any future new drug likely to be so. A drug so potent as to alter bacterial growth in the host automatically sets the stage for superinfection with resistant organisms, for no drug will suppress all known bacteria. Proper evaluation must eventually be made in the field of antibacterial therapy; it is evident that these drugs are not harmless. Greater caution must be observed in the use of these drugs.

ORIGINAL ARTICLE

The Diagnosis and Treatment of Rheumatoid Arthritis by the General Practitioner

We must be aware of the protean character of this disease, recognize it in its atypical forms, and differentiate it from conditions simulating it

CHARLES W. WAINWRIGHT, M.D., *Baltimore, Maryland*

This title naturally raises three inquiries: (1) What is so difficult about the diagnosis of rheumatoid arthritis; (2) What can one do about its treatment; (3) Is it really the concern of the general practitioner? The first two questions we will shortly discuss; the third needs some comment now.

Rheumatoid arthritis is the crippling type: its distribution is wide, attacking all strata of society, and its chronicity and low mortality make it an enormous financial drain and economic hardship. It causes others of the family group to suffer as well as the victim. The costs of long hospital stays are so prohibitive as to make the care and treatment essentially a problem of home care, and puts it squarely up to the general practitioner to be prepared to meet it and discharge this obligation to society. Our objective here, as in dealing with any other disease, is to reverse the disease process and terminate the malady; and, failing in that, to retard its progress and limit the damage inflicted.

NATURE OF THE DISEASE

Rheumatoid arthritis is an inflammation which begins in the synovial lining, is invasive, prolifer-

ative, and extends even to subchondral bone. In degenerative joint disease the initial change is cartilage degeneration, and the synovium is not involved except in a secondary fashion. In osteoarthritis, such proliferative change as occurs is in bone and the resulting node and spur formation and condensation of bone is a compensatory process for the narrowing of the joint space, which the thinning and destruction of the cartilage brings about.

DIFFERENTIATION BY X-RAY

In the early stages of rheumatoid arthritis no change in the joint is apparent, and the diagnosis is made on the soft tissue swelling which is quite evident without x-ray examination. The demonstration of the early narrowing in the joint space in osteoarthritis is particularly helpful in case of obvious involvement of the distal joints of the fingers with Heberden's nodes, and of the proximal joints as well. As much as this involvement of the proximal joints may suggest rheumatoid arthritis, it can be identified as osteoarthritis by the narrowing of the joint space which is early demonstrable by x-ray. The narrowing is usually more marked in the distal joints, and we seldom, if ever, see the distal joints involved in other than osteoarthritis, except in the rheumatoid type of arthritis associated with psoriasis, when the nails are involved in the psoriatic process.

One must not be misled by the inflammatory reaction which may even be marked when cartilage degeneration is rapid. This is more frequently seen in the distal than in the proximal interphalangeal joints, and is not associated or superimposed rheumatoid arthritis. Again, in osteoarthritis the involvement of the carpo-metacarpal joint of the thumb can, by reason of swelling, tenderness and painful movement, be highly suggestive of rheumatoid arthritis. Familiarity with this location of osteoarthritic change and its association with classical Heberden's nodes in the absence of other signs of an inflammatory arthritis, gives confidence to our diagnosis.

DIFFICULTY IN DIAGNOSIS DIFFERS FOR DIFFERENT JOINTS

The differentiation of osteoarthritis from rheumatoid arthritis varies with the location of the malady. In the hip it offers little real difficulty, as involvement of the hip joint is seldom, if ever, seen in rheumatoid arthritis without unmistakable evidence of the condition in many joints. Here the early narrowing of the joint space is usually evident in osteoarthritis, and osteophyte formation is early and often extensive. The same obtains in the knee joint when in osteoarthritis pain on weight-bearing is the conspicuous feature, and seldom is there free fluid or other sign of inflammation without trauma, or unless the osteoarthritis is by reason of its extent sufficiently irritating to cause synovial reaction.

NOT TO BE CONFUSED WITH MARIE-STRUMPELL DISEASE

To be certain that one is dealing with osteoarthritis of the spine and not with Marie-Strumpell disease may offer real difficulties. Marie-Strumpell disease is an inflammatory arthritis of the spine which shows its initial change in the sacroiliac joints, and affects young males mainly. In the early stages the pain

and stiffness in the low back may be confused with postural strain, but this is much more frequently seen in adult females, to a lesser extent in young girls. The symptoms may be present for two or three years before distinctive changes occur; there may be limitation of chest expansion even before changes are demonstrable by x-ray. In elderly people when the changes of osteoarthritis are to be expected, the picture may be confused with Marie-Strumpell arthritis by reason of the amount of pain and degree of stiffness of the spine. Here x-ray may reveal ankylosis of the spine by osteophyte formation so extensive that the bodies of the vertebrae are bridged and fused by the great hook-like osteophytes, greatly limiting movement in the lower spine.

RHEUMATIC FEVER

The initial attack of a rheumatic fever seldom, if ever, occurs after the age of 30. It is not uncommon to find rheumatoid arthritis late in the life of a person who had rheumatic fever as a child, and has post-rheumatic valvular heart disease; but we do not see rheumatic fever pass over into rheumatoid arthritis. When in adults we see features suggestive of both conditions, it is usually neither; but most likely disseminated lupus. The therapeutic test with salicylates is our most reliable diagnostic aid. In children, recurring sore throat and vague aches and pains in the legs and feet, which are unresponsive to salicylates, so often prove to be infected lymphoid tissue in the nasopharynx, plus flat feet.

ACUTE JOINT INFLAMMATIONS

Among the acute arthritides, gout in its initial phase offers much dificulty in its differentiation from rheumatoid arthritis. Especially is this true in the young, for we rarely think of gout except in older people. As to occurrence by sex in gout, the preponderance is much in favor of the male. The onset of rheumatoid arthritis may be acute with intense involvement of single joints, just as acute as an attack of gout. This atypical attack of rheumatoid arthritis usually lasts a day or two, rather than a week or two as in gout, and alteration of the joint is long delayed by reason of the short duration of the inflammatory state. After the attack, the joint appears quite as normal as after the early attacks of gout. In gout the serum uric acid is usually elevated, but when in rheumatoid arthritis it is at the upper limit of normal or slightly elevated, our problem becomes even more difficult. The acute attack is much shorter in this atypical onset of rheumatoid arthritis than in gout. Rheumatoid arthritis so atypical in its onset passes on to the characteristic picture of the disease, when the attacks are of longer and longer duration, and its chronic nature becomes evident. Protracted attacks may require the therapeutic test with colchicine to tell them apart.

BACTERIAL ARTHRITIDES

These occur during bacterial infections, as metastatic joints, from which the organism can usually be isolated, establishing the nature of the arthritis. An exception is gonococcal arthritis, now infrequently seen. The gonococcus is difficult to grow, seems to disappear from the joint quickly, and unless properly cultivated early in the course of the arthritis is seldom recovered. Gon-

ococcal arthritis tends to flit about, involving joints transiently, finally localizing in one joint.

The classical picture of rheumatoid arthritis is easily read. It is, however, not always so easy to be certain of the stage of the disease. In the late stages activity may be of very low grade; the patient not anemic, even over-nourished, all the constitutional features subsided. The presence of the subcutaneous fibroid nodule indicates activity of some degree, usually chronic and of low grade. In the early stages when atypical forms of the disease present, many aids are used, none in themselves diagnostic. Nothing will replace sound clinical evaluation. The Rose test, the ability of arthritic sera to agglutinate sensitized sheep cells, is of little value early, when such a test is needed. Nothing will supplant a careful history and physical examination and the use of reasoning, which are available to all who will employ them.

SYSTEMIC LUPUS ERYTHEMATOSUS

More and more cases of rheumatoid arthritis are being seen in which either lupus develops in the course of the disease, or the arthritis is part and parcel of systemic lupus, and not recognized as such until other manifestations of lupus make the diagnosis. The combination of arthritic, renal, serous membrane and skin lesions, and often hypertension with high fever, is a syndrome which makes up systemic lupus erythematosus. These and other lesions may exist together, or even appear successively as distinct illnesses, which in the aggregate give the clinical picture. In the past few years, the L.E. cell has come into prominence in the diagnosis of lupus. Some regard the presence of this cell in the blood as conclusive, regardless of the presence or absence of other manifestations. By others it is reported in rheumatoid arthritis, *a member of the collagen vascular disease group as well.* We see systemic lupus develop in the course of rheumatoid arthritis and arthritic manifestations as a part of the picture of systemic lupus. The close association of the two conditions should always be kept in mind, a febrile response out of proportion to the degree of the arthritis should always cause concern. Hypertension is so seldom seen with rheumatoid arthritis that the coincidence strongly suggests something more than rheumatoid arthritis. Likewise, leucopenia should cause suspicion. Elevation of the serum globulin, even with reversal of the albumin-globulin ratio, occurs too frequently in rheumatoid arthritis to be of any significance.

It seems reasonable to say that the disease will in time assume its unmistakable form, when there will be no difficulty in diagnosis. Early differentiation, which requires the recognition of variants and the exclusion of confusing conditions, is most desirable before irreparable damage has been done; no doctor cares to tell a patient that he or she has rheumatoid arthritis until he is sure of the truth of the statement.

TREATMENT

Rheumatoid arthritis is an inflammatory joint disease, which begins in the vast majority of cases before the age of 40 years. In the natural course, periods of activity are followed by periods of quiescence; and so the unrelenting progress of the disease goes on. We can speak only

in terms of inducing a remission, not in terms of cure. It is essential that we differentiate between symptoms produced by active arthritis and those that are the end result of the disease. The end result in the joint may vary from the least loss of functional capacity to destructive change so complete that there is no function left. A joint has no working margin. When damaged to any degree, by so much is the function lost. Muscle involvement may make joint functioning impossible. It is this that makes physical therapy so important. If one is guided by the principle that it is far easier to retain function than to regain it, this important part of the treatment will not be overlooked. Inflammation subsides faster with the part at rest, but inflammation in a joint requires judicious compromise between rest and movement. The patient will not injure himself; so no passive movement of a joint or muscle can equal in effectiveness voluntary movement.

YESTERDAY'S "FOCI OF INFECTION"

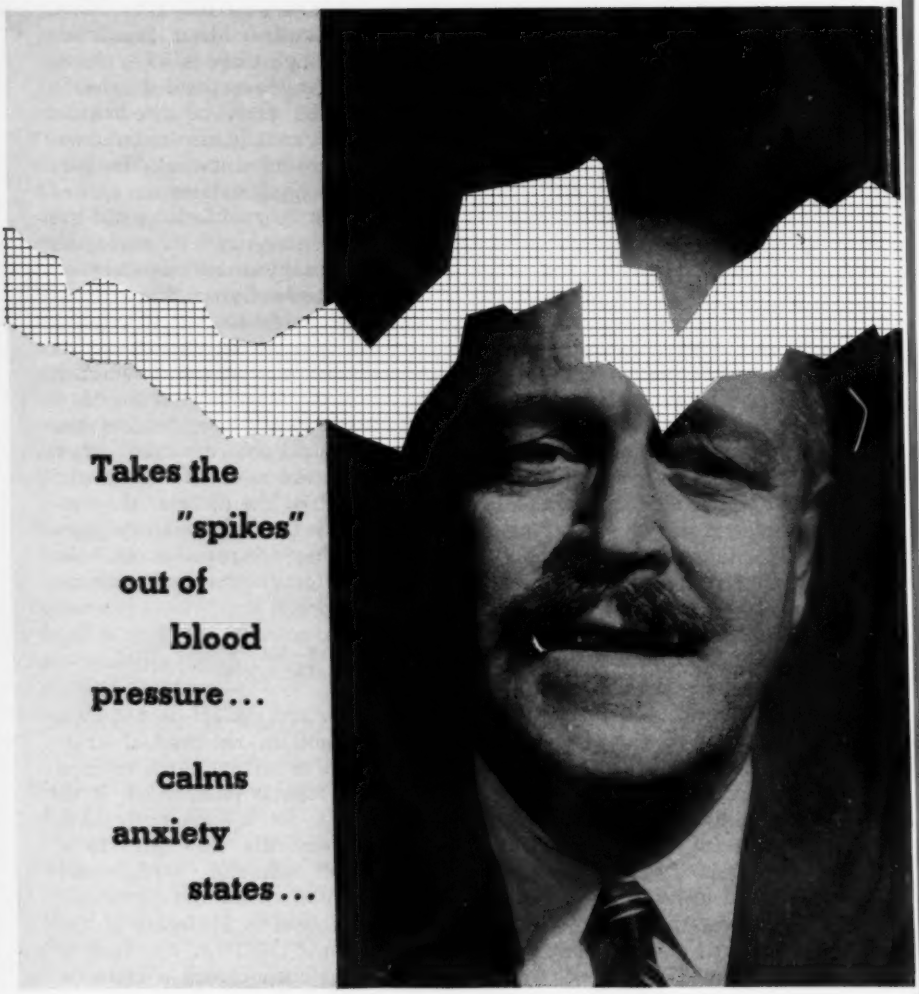
Anything done for the disease which is followed by a remission is given credit for that remission. As invalid as that form of reasoning may be, it accounts in large measure for the advocacy of so many forms of treatment, e.g., the removal of foci of infection. The bulk of the evidence is that such foci play no part in the disease.

TODAY'S CORTISONE AND ACTH

The dramatic action of these two substances and their analogues has eliminated many drugs which have been really ineffective, and has restricted the use of others which neither act so rapidly nor with such complete effect. Salicylates have held, and still hold, a prominent place. Although there is no evidence that salicylates ever healed a lesion of rheumatic fever or rheumatoid arthritis, their influence upon rheumatic activity is profound. The continuous use of salicylates has gained great favor, particularly with the British. Cortisone and its analogues have profound anti-inflammatory effect and afford sufferers dramatic relief. Their mode of action may be disclosed in time. We have been far too zealous in our efforts to establish the use of these agents, not only as a therapeutic procedure, but as the procedure of choice. Like other drugs, they are more efficient in the early stages of the disease; they influence only the inflammatory reaction; and they are prone as are other drugs to produce serious undesirable effects.

NOT CURATIVE—PRONE TO CAUSE SIDE REACTIONS

Cortisone and ACTH do not cure anything, and in rheumatoid arthritis the active inflammation returns when their use is terminated, With small dosage for a sufficiently long time, the arthritis may go into a spontaneous remission. Withdrawal after long use, unless very gradual, may be followed by evidences of hypoadrenalism. Used for too long a period, they may create a state of hypercortisonism, with steadily mounting undesirable effects. Serious effects of cortisone upon infections, notably tuberculosis, upon the nervous system and upper gastrointestinal tract may occur, in spite of the most careful supervision. There are times when nothing else is effective, times when all one can do is give the measure of relief which



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cortisone affords, times when it is imperative that the bread-winner be kept going. Our position is that it is unwise to use cortisone in the treatment of rheumatoid arthritis until one is compelled to use it, and then in the minimum effective dosage.

BUTAZOLIDIN

More recently Butazolidin has come into some use. It is a pyrazol derivative and the suppressing effect of this group of drugs upon bone marrow activity has real foundation. Its analgesic effect is established; it also has an antipyretic effect; its anti-inflammatory effect is not so clear-cut. It has the water-retaining properties of cortisone, and a low-sodium diet is necessary with its use. Likewise, it has the ulcer-producing potentialities of cortisone, but its depressing effect upon bone marrow activity is more to be feared, and demands that the blood be carefully followed. Its greatest effectiveness appears to be its influence upon the pain of Marie-Strumpell arthritis, but like cortisone, the effect ceases with the discontinuance of the drug.

GOLD

Since the advent of cortisone, the use of gold in the treatment of rheumatoid arthritis has been overshadowed. It requires two to three months to initiate a remission with gold, only two or three days with cortisone. However, gold is the only drug that will induce a remission that will be sustained, often for long periods, after the drug has been discontinued. Gold is effective only in the active phase of the disease; then the percentage of remissions is high. Some advocate its long continuance, at longer intervals between injections, after the initial course has been given. If it is given again, in a few weeks or months after the initial course, it may not be effective at all, and there is greater risk of toxic effects. If the interval between courses is a year it may be as effective the second time as the first. The state of the kidney, the skin and mucous membranes, and the blood must be determined before each injection of gold is made. Definite toxic effects contraindicate further use of gold. One might conclude that it would be ideal to obtain the immediate effect of cortisone while gold is accumulating in the body and is becoming effective. In our hands, the cortisone seemed in some way to vitiate the effect of gold.

CHLOROQUIN

The preliminary reports indicate chloroquin to be effective in 70% of the cases treated, but it is hardly established as an anti-rheumatic drug. Drug rash in 10% has been the most undesirable effect reported; in some it has not been well tolerated by the stomach. Bone marrow suppression by chloroquin was reported in some instances after World War II, when the drug had been used for long periods of time as an anti-malarial.

CONCLUSION

It is apparent, then, that there is no fixed plan of therapy in rheumatoid arthritis. Realizing that we do not know its cause, our guiding principle should be to prevent loss of joint function in so far as this is possible, and to induce a remission of the inflammatory process. We cannot predict its course, or the ultimate outcome, but we can do a great deal to influence both of them.◄

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ORIGINAL ARTICLE

Treatment of Trichomonas Vaginitis

This therapy was effective in 46 patients from a group of 51, and there were no local, systemic or allergic manifestations in any patient

HAROLD H. WEINER, M.D., *Eatontown, New Jersey*

The chronicity of this disease and the necessity for curative, and not merely symptomatic therapy have long been recognized and very recently especially emphasized in the first international symposium on trichomonas infestation.[1] Recurrence, due to inadequate treatment, and re-infection from the male sexual partner are the big problems. Another factor in the stubborness of the infection is that trichomonads burrow under debris and mucus, and some agents even coagulate mucus which further shields the parasites.

Several years ago Davis[2] reported encouraging results in the treatment of vaginal trichomoniasis with a blend of a detergent, a chelating and a wetting agent. Additional laboratory and clinical studies seemed to corroborate these preliminary works.[3,4] Recently Decker[5] published the results of a systematic clinical investigation using this preparation.

A new clinical study was done on this therapeutic agent available as Vagisec* (liquid and jelly), containing polyoxyethylene nonyl phenol, sodium ethylene diamine tetra-acetate, and sodium dioctyl sulfosuccinate. *In vitro* tests show that

1. Les Infestations A Trichomonas. Premier Symposium Européen, Reims, 28—20 Mai 1957. Masson et Cie., Paris, 1957.
2. Davis, C. H. & Grand, C. G., *Am. J. Obst. & Gynec.*, 68:559,1954.

*Vagisec® Julius Schmid, Inc., New York.
3. Davis, C. H., *J.A.M.A.*, 157:126,1955.
4. Davis, C. H., *West. J. Surg.*, 63:53,1955.
5. Decker, A., *New York J. Med.*, 57:2237,1957.

the flagellate disintegrates after a few seconds contact with the preparation.

METHOD

Proper diagnostic procedure is of eminent importance. In this study cultures were made, using a loop of material taken from the posterior fornix. In some cases these were found to be positive while the wet smear or hanging drop remained negative. Consequently, the criterion of cure in this study was the negative culture. Despite the fact that exogenous re-infection (the most common probable source) may occur and distort the results, repeated cultures as curative evidence are imperative after completion of any treatment.

In this investigation of the effectiveness of this preparation in the treatment *and* cure of vaginal trichomoniasis, the diagnosis followed the principles as outlined above, and the criterion of cure was in each case at least four negative cultures obtained immediately after completion of treatment and following three consecutive menstrual cycles or at three monthly intervals (if menses were absent for any reason).

CULTURES

The culture studies, based on Kupferberg's[6] recommendations, were made with 8 cc. of STS medium to which 250 units of crystalline penicillin G in 0.5 cc. of distilled water, 10 mg. of streptomycin in 1.0 cc. of distilled water and 0.5 cc. of freshly pooled, filtered human serum were added and adjusted to pH 6.0 with normal NaOH. Specimens kept in this medium were incubated at 37°C for at least 48 hours, when the first reading was made.

There is no reason, even for the busy practitioner, to dismiss cultures as being costly and time-consuming. There are no difficulties involved and, except for a small inexpensive office incubator, no laboratory equipment is necessary. The medium is readily obtainable from any laboratory.

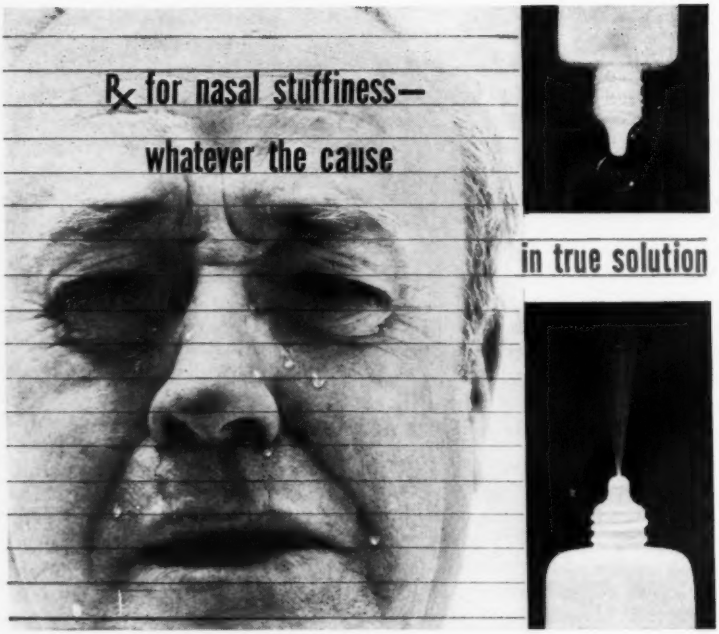
OFFICE THERAPY

The course of therapy followed closely that outlined by Davis. For four weeks, at the time of the bi-weekly office visits, the vagina was cleansed with a cotton sponge soaked in 1:100 dilution of Vagisec Liquid®. The speculum was spread as far as could be done without discomfort, was rotated gently and, while doing so, the entire vaginal canal, including the fornices and the cervix, was swabbed with a back-and-forth and side-to-side motion. Before removing the speculum, any excess solution was absorbed by a dry sponge. Existing intertrigo was cleansed with the solution.

HOME THERAPY

Parallel to the bi-weekly office treatment, the patient was instructed to douche daily at bedtime with a thoroughly mixed solution. Instructions to the patient were quite specific in each instance. The solution is made by mixing two teaspoonfuls of Vagisec Liquid in ½ cup of warm water, stirring and adding this to two quarts of lukewarm water. The patient was told to lie supine in the bathtub, the douche about two feet above the hips, and insert the nozzle into the vagina, holding it between the second and third fingers, meanwhile closing the labia so as to prevent the solution from escaping too

6. Kupferberg, A. B., et al., *Proc. Soc. Exper. Biol. & Med.*, 67:304,1948.



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*DOSAGE: as spray—2 sprays into each nostril every 2-3 hours.
as drops—2 or 3 drops every 2-3 hours (invert bottle).

SUPPLIED: in 15 cc. plastic spray bottles.

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TABLE 1

FIFTY-ONE CASES OF TRICHOMONAS VAGINITIS TREATED WITH VAGISEC LIQUID AND JELLY

	TOTAL NUMBER	SYMPTOMS DISAPPEARED AFTER: 1 WEEK	2 WEEKS	3 WEEKS	4 WEEKS	CURED[1]
Married Women	33	16	28	30	33	33
Unmarried women, and married women without sexual relationship	11	8	9	11	11	9
Pregnant women[2]	5	1	2	2	3	2
Extra vaginal (bladder) infection[3] Married	1	0	1	0	0[3]	1
Malignancy, 76 years old	1	0	0	1	1	1
Total	51	25	40	44	48	46
	100%	49%	78.4%	86.27%	94.1%	90.2%

1. As determined by three monthly consecutive negative cultures
2. Therapy could not be followed according to schedule
3. A second course of prescribed treatment was necessary

freely. The force of the solution spreads the folds of the vaginal mucous membrane, permitting contact of the solution deep in the crevices where the trichomonads may be harbored.

Following the douche, an applicatorful (5 cc.) of jelly was inserted high up into the vaginal canal.

PREGNANT PATIENTS

Pregnant patients received the office treatment and insertion of jelly but were not allowed to douche at home.

RE-INFECTION BY HUSBAND

Because of the known prevalence of trichomonads in the male, it was explained to the patient that to protect her from possible re-infection, the use of a condom at coitus during the course of this treatment is important. It was also recommended that the husband cleanse his genitalia with Vagisec solution of the same concentration (1:100).

RESULTS

Fifty-one private patients were treated in accordance with the plan of this investigation. All 51 women completed their course of therapy. Of these 51 cases, 46 patients (90.2%) were pronounced cured after negative cultures were obtained during the three months' follow-up period. (Table 1)

All patients had a previous history of leukorrhea of not always a clearly established etiology. Vaginal therapy had consisted of vinegar douches, some of the popular known brand douche powders, vaginal tablets solely, vaginal tablets and douche, vaginal jellies of many kinds, bicarbonate of soda, salt water, boric acid, Zonite, plain tap water, and merely cleansing of the introitus with soap and water.

There were 5 cases of pregnancy among the 51 patients. Age deviation had no influence on the organism. The age span was from 18 to

76 years. The 18 year old girl had a bicornuate uterus with a pyometrium, a mucopurulent discharge oozed from one visible cervical os. She was freed from the trichomonas infection, and a marked improvement occurred in her pyometritis. The oldest patient was 76 years of age, had carcinoma of the cervix, discovered after a vaginal pessary was found which had been left in place for two years. A positive Papanicolaou stain was followed by a confirmative biopsy. The foul-smelling vaginal secretions were loaded with trichomonads. This patient was cured of the trichomonas infection as proved by repeated negative cultures. A patient who wore a pessary during the entire therapy had the same favorable result.

CAUTERIZATION

Cauterization of an obstinate cervicitis, especially the ulcerative-type, during the course of therapy is recommended. During several months of clinical studies with Vagisec, cauterization of the cervix was required with less frequency.

INFECTION OTHER THAN VAGINAL

It has long been recognized that persistent cases of vaginal infection warrant a search for sources other than the vagina. Infection of Skene's and Bartholin's glands is simple to treat. A more serious problem, although rare, is infection of the bladder. In one such case in the present study, after several negative smears, a positive vaginal culture was obtained. Following catheterization, trichomonads were found in the culture of the urine. The patient was instructed to continue another course of home treatment, and the necessity of her husband using a condom was again emphasized. For 3 weeks during the bi-weekly office visits her bladder was irrigated under sterile technique with normal saline solution using one teaspoonful of Vagisec Liquid to the quart. (1:250) Cure was evidenced by three successive monthly negative cultures.

Of the 5 cases not cured, one had a rapidly growing abdominal tumor (ovarian cyst) with intermittent vaginal bleeding. Because this case closely resembled pregnancy, jelly alone was used. Two other cases were pregnancies and also in these instances only the jelly was used.

Following the first week of treatment, 49% of the patients were freed of all itching, burning, intertrigo and discharge. Two weeks' therapy resulted in negative wet smears in 78.4% of the cases. At the end of the two week period, the vaginal mucosa had a more normal appearance, the leukorrhea had almost disappeared. Even in the five cases where a cure had not been effected, there were no annoying symptoms and the patients were completely comfortable.

There were no local or systemic side effects from the use of Vagisec Liquid or Jelly in this study. Slight reactions (burning of the introitus) occurred in only two cases. Discontinuance of the home douching for one single day was sufficient to eliminate this reaction. Reoccurrence was not apparent. There were no allergic manifestations in the 51 cases.

SUMMARY

A cure of vaginal trichomoniasis has been accomplished in 46 of 51 patients by the proper use of Vagisec Liquid and Jelly. After completion of a four-week home and office

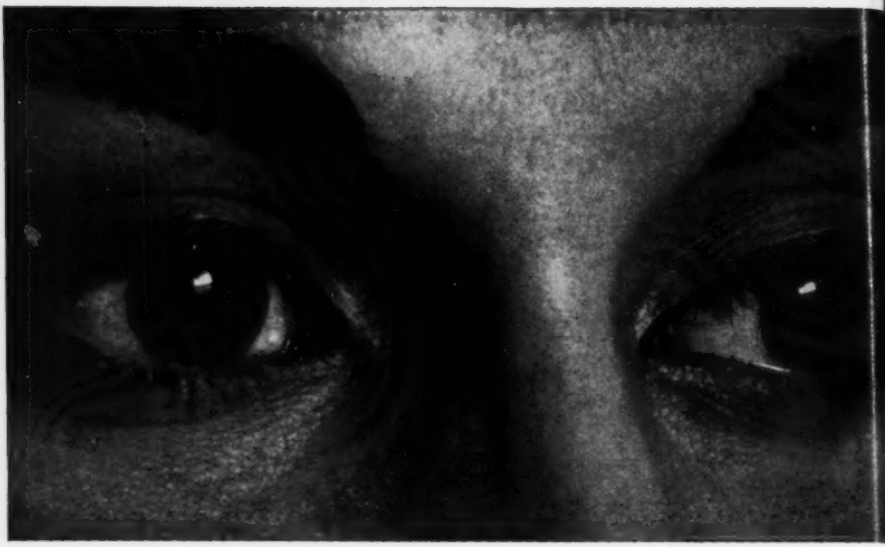
treatment, the patients remained under observation for a three-month follow-up period. Negative cultures obtained one to three days following menses during this follow-up period constituted the criterion of cure. There have been no relapses among the 46 cured patients.

Observations on 244 Patients with Primary Cancer of the Lung

Most of the patients were 40 to 60 years of age; there were 214 men and 30 women; 69.6% of the patients smoked an average of 20 to 25 cigarettes per day; 12% did not smoke, and whether the remaining patients did or did not smoke could not be ascertained. Cough was the first symptom in 69 patients, pain of the thorax in 59, fever in 41, asthenia in 28, dyspnea in 11, dysphonia in 10, expectoration of blood in 10, articular pain in six, loss of weight in one, and other symptoms in two; no symptoms in seven patients. Symptoms had been present for an average of 2.6 months when first seen.

The neoplasia was mistaken for pulmonary tuberculosis in 26 patients. Bronchoscopy and biopsy were the most reliable means of diagnosis. Patients who received irradiation therapy survived for an average of six months, those not irradiated survived 3.6 months after first consulting a physician. Patients subjected to radioactive cobalt therapy survived for a longer period.

Manara, G., et al., *Chir. torac.*, 9:656-686,1956.



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[*BRENNAN, J.W.: AM. J. OPHTH. 35:1343, 1952.]

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ORIGINAL ARTICLE

Practical Applications With Common-Sense Approach in Obstetrics

Simplest measures are often most effective, and good prenatal care will prevent many complications; induced labor is frequently used inadvisedly

GEORGE G. GREENE, M.D.,* *Lexington, Kentucky*

The obstetrical patient has confidence in her physician, and trusts that she will be guided through a successful pregnancy and delivery.

The first visit may be time-consuming, and the physician should be prepared for it. Questions must be answered carefully, in detail, and with sincerity. A good physical examination and a few laboratory procedures must be carried out. The patient should be assured that her pelvis is not too small, that her "womb" is fine as to position etc., and that there is every reason to believe she can have a healthy baby just like other women.

It is a good plan to have a list of printed instructions, better a small booklet, answering many of the questions commonly asked. The latter plan has saved me many hours and many telephone calls, not to mention the relief of anxiety afforded the patient. From time to time, during the past 10 years, I have added new questions to this booklet. These have been answered more fully in reprintings. The patients (and sometimes the husbands) are grateful for this. This is particularly true with the primaparous patient.

*Chairman of the Dept. of Obstetrics and Gynecology at Central Baptist Hospital.

MEDICATIONS

The healthy pregnant woman needs little medication. The physician may be influenced by the patient who wants to know when she will be getting her "vitamins" or if not, why not? Too often the physician routinely orders expensive medications of calcium, iron and multivitamins. A young woman drinking one quart of milk per day and eating a well rounded diet, does not need, nor can her body well utilize these synthetic preparations.

There are patients with secondary anemia, some who cannot drink milk, and some who have trouble eating a good diet because of poor appetite. These are the patients requiring medicines, not the others. Calcium already fixed in a tooth is not available for use to a fetus and cannot be drawn upon in any sense. Our dental friends could be of help in this respect if they would explain this to our mutual patients.

Good hemoglobin levels, as determined in early pregnancy are no cause for complacency. If these are near 12 grams, it is imperative that another hemoglobin test be done at seven months at least, and more frequent tests are advantageous. The greater demand for iron in the last trimester requires adjunctive therapy in the latter months. It is good practice to use supportive measures when the hemoglobin falls below 11.5 to 12 grams. Usually ferrous carbonate, 5 grains 3 times daily, is sufficient. After one month of iron therapy, a repeat hemoglobin test is in order. If response has not been favorable, change to one of the medications with a cobalt additive.

When calcium is indicated, which is much less often than many seem to think, phosphorus-free preparations are the choice. Multivitamins are infrequently needed. May the day soon arrive when a small phosphorus-free calcium and vitamin D capsule is available at a reasonable price, omitting the unnecessary "fill ins."

INDUCTION OF LABOR

There is a very real need for induced labor in only a few instances, particularly in toxemia of pregnancy —a condition that never is cured until delivery is accomplished and then some of the deleterious effects remain on indefinitely. Certainly until we find an absolute cure for toxemia, induction of labor will always have a deserved position. When indications are listed for induction of labor and start with toxemia, we can almost stop, except for an occasional need in real postmaturity and a few other rare instances.

The definition of the word obstetrics means to "stand before." Possibly there is need of a new word to identify those who specialize in the subspecialty of induced labor. Whenever a physician chooses the day for delivery to suit the patient and himself, he is no longer practicing obstetrics.

There are a number of questions to be answered to justify this practice:

1. Is it necessary so as to obtain a normal infant and have the mother in as good condition as if labor were spontaneous?

2. Is the *convenience* of the mother and physician not at all involved?

3. Will the baby have as good intelligence in later years as will one born by a non-induced labor?

4. Will the maternal pelvic structure be in as good condition?

5. Will the labor be as normal and easy as the natural process?

6. What about chance of prolapse of the cord?

7. Is more resuscitation of the infant likely?

If these, and possibly a few other, questions can be answered in the affirmative, then induced labor *might be* justified, I do not believe that there is a single physician that practices obstetrics who could honestly answer all these questions without reservation. If not, then "delivery by appointment" can not be justified.

Reference is not made to the use of castor oil and hot enemas, as I do not believe this ever hurt anything about a mother except her hemorrhoids. Unless the labor were to occur in 2 or 3 days, it is doubtful that this routine would start labor.

There are few physicians who can not recall bad results after induced labor. I can recall unnecessary cesarean section, prolonged irregular labor, cyanotic infants, etc., and so can most others long experienced in obstetrics. We are here to aid and not to interfere unless natural processes have failed, or it is clearly evident that they will fail.

TOXEMIA

For practical purposes, toxemia of pregnancy may be divided into these three groups:

1. Those with definite signs of toxemia but no convulsions.

2. Those with true eclampsia.

3. Those with chronic kidney damage and hypertension, with eclampsia superimposed.

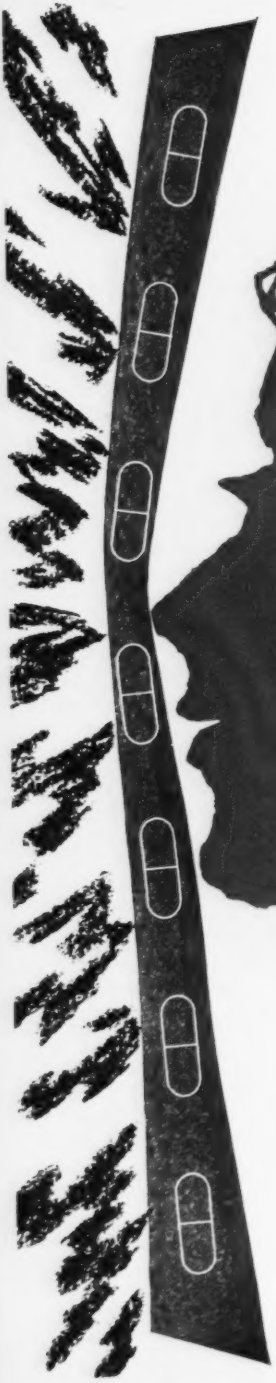
The best preventive treatment is good prenatal care and a sensible cooperative patient. This implies that the patient understands that a diet high in proteins, low enough in calories and sodium to prevent edema and excessive weight gain, is not only important, but imperative. She should be told that adequate protein at each meal is essential and why. The calcium that she should be getting from her milk intake will be more completely utilized if protein consumption is as it should be.

Emotional and psychic elements can have a large share in toxemia. Here is where the physician must know his patient well, and keep on reassuring, dispelling doubts and subconscious fears. When confronted with eclampsia, we need to work fast.

LOWERING THE BLOOD PRESSURE

There is no doubt that the use of hypotensive drugs, such as veratrum viride, is the treatment of choice. Possibly apresoline and unitesin are just as effective, if one has been using the drug over a long period of time. Familiarity is necessary to know the actions and side effects. I have used veratrum viride for 15 years. To date I have encountered only one failure, and that was about our 25th eclamptic patient. Glucose is a necessity—5 or 10% every 8 or 12 hours, depending on the response.

Three or 5 minims of veratrone is used as the initial dose, to be repeated every 30 minutes until the blood pressure has become stabilized, and after that as indicated by blood pressure rise. The blood pressure must not be lowered below 120 to 130 systolic, and the pulse should not drop below 60. Usually the patient is conscious after a few doses of the drug, then she can warn of signs of further convulsions, as headache, etc. Take the blood pressure frequently and keep the patient un-



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*Harvey, R. J.: N. Y. State J. Med. 59:1897, 1959.

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WHEN INDUCTION IS IN ORDER

When the eclamptic state has been controlled for 24 to 48 hours, and delivery has not occurred, and the patient is near term (as usually is the case) induction of labor is in order. This is usually fairly easy. In fact, many of the patients are thrown into labor by the eclamptic process. If the patient is a primipara and the induction fails, and there is evidence that the convulsive state again seems imminent, cesarean section is the best way to terminate the pregnancy and the toxemic condidition. Let it be said again and again that a cesarean should never be done during the active eclamptic state. This may bring about a death that could have been prevented. The mortality under such radical treatment reached almost 50% in one institution a number of years ago.

PREVENTION AND TREATMENT OF POSTPARTUM BLEEDING

1. Allow the placenta a little time to separate spontaneously by nature's method of rhythmic contractions. This is such an easy, normal process that requires no pushing and shoving on the boggy uterus.

2. If bleeding persists and ordinary attempts at expression of the placenta fail, after 20 to 30 minutes it may be well to do a manual removal, carefully and under the best sterile technique. It is a good practice to introduce 5 to 10 grams of sulfanilamide crystals into the uterine cavity after removing the placenta. Much of this gets no further than the vaginal canal, but it can be a great help in preventing postpartum infection.

3. If the bleeding is excessive after the placenta is out, intravenous methergine or ergotrate will control a boggy uterus. It is not good practice to use an oxytoxic prior to the placenta detaching itself as the placenta may be easily "trapped." If bleeding continues and the uterus remains boggy, a possible rupture must be suspected and a thorough exploration for such a tear done with the examining hand.

4. The most effective and simplest measures for immediate control of profuse uterine bleeding is holding the relaxed uterus up out of pelvis by deep anterior-posterior pressure over the lower uterine segment, using the other hand to bring the body of the uterus forward, flexing it on the lower uterine segment being pressed toward the patient's back.

5. If the bleeding continues and is bright red with little or no clotting, the cervix is the most likely source, with the vaginal membrane the next in order. A careful examination of these will usually give the answer if not discovered heretofore. Suturing of these tears will usually quickly control this.

PROCEDURE AFTER PATIENT IS RETURNED TO HER ROOM

1. Gentle kneading of the uterus, *never vigorous* massage, will keep the bleeding at a minimum.

2. Administer an oxytoxic intramuscularly. One of the longer-lasting preparations, 30 minutes after the first injection, will help to maintain the tone of the uterus for another 30 minutes to one hour, during the most critical period for delayed hemorrhage.

3. Last and most important is close supervision for one hour or longer if

the patient is not well recovered from her anesthesia. Attention should not only be given to the uterus but also to the episiotomy wound for any abnormality. An experienced nurse is most effective against postpartum hemorrhage.

CONCLUSION

There are many other everyday problems that could be discussed but I have chosen for discussion conditions where poor judgment is often used, not only in one instance, but occasionally in several.

Anemias of Hypophysial and Diencephalic Origin

No convincing evidence has been found to show that anemia may result directly from any diencephalic condition, without the intervention of the pituitary. Anterior pituitary insufficiency is responsible for the most frequent and severe of all anemias of endocrine origin.

Anemia is almost constant in Sheehan's postpartum syndrome, common with certain hypophysial tumors. The anemia is usually microcytic and either hypochromic or normochromic during the greater part of its course. Gastric achylia is also a common finding. A combination of thyroid extract with testosterone and cortisone, given in small doses, is effective in some cases, others require corticotropin.

Experimental findings strongly suggest the existence of a specifically hematopoietic hypophysial principle. Its mode of action is a matter of speculation.

Leprat, J., *Presse med.*, 65:892-895,1957.

ORIGINAL ARTICLE

Psychiatric Disorders in Medical Practice

The more salient psychiatric aspects of psychophysiologic illnesses, and the responsibilities of general practitioners in their management

ELMER L. CAVENY, M.D., F.A.P.A., F.A.C.P.,*
Birmingham, Alabama

In the present century two traditions of research have converged upon one fundamental problem, that of the significance of emotions; namely, the studies of Cannon and Pavlov, on the one hand, and the studies of Freud on the other.[1] The physiologic tradition of Cannon and the psychologic tradition of Freud today are coming closer to effecting a merger than ever before. Since Cannon's studies of the cat's emergency reaction to various stresses, much has appeared on the physiology of stress, very little of it pertaining to the psychological concepts which are always present in varying degrees in time of physiological changes due to stress. For example, preception, a psyche phenomenon of receiving an impression of relations and total situations through the senses, forms a natural bridge between sense-organ physiology, cortical function and interpersonal relationships. It can be used to connect the individual's structural characteristics with the learned interpretations of his surroundings. Similarly, learning, a psychological conditioning, can be directly related to Pav-

*Professor and Chairman, Dept. of Psychiatry, Medical College of Alabama, Birmingham, Ala.
1. Lyddell, H., Annual Lecture for Natl. Inst. of Mental Health, Bethesda, Md., U.S. Gov. Printing Office, Wash., D.C., April, 1954.

lovian conditioning, a physiologic phenomenon.[2]

PSYCHIATRIC TEACHING

In recent years, practitioners of medicine have realized the need for a broader concept of human biology, if they are to apply their knowledge and skill effectively in dealing with patients as total persons. With this recognition, and the advent of dynamic psychiatry, the teaching of psychiatry as an integral part of medicine has rapidly infiltrated all medical education. The basic aim in psychiatric teaching today is to equip all physicians with a reasonably adequate knowledge of the more common and important problems of patients as persons. This means that medicine in the United States is now placing greater emphasis upon personal and community background of patients, and the influence of the social and cultural factors in health and illness.

Even though the medical profession has performed magnificently in safeguarding and raising the health level of all our people, this performance has been much less effective in the field of mental and emotional health. This contribution can be made through the work of non-psychiatric medical practitioners.

The job of taking care of the emotional health of our population must be undertaken by the medical profession as a whole. The vast majority of persons who can be helped to better health through assistance with their emotional problems need not and should not go to the psychiatrist. In the course of ordinary contact with their own doctors, people have a right to expect assistance with the usual run of emotional illnesses.

The knowledge gained through the family doctor's daily activity has certain value beyond that to be had by any special techniques. It is imperative that emotional illnesses be in their early stages when there is most chance of benefit from treatment.

PHYSICIANS' RESPONSIBILITIES

The professional equipment of every physician should include knowledge which may be considered in four general areas:

1. The ability to obtain a good medical history, and at the same time make pertinent observations concerning psychological and social aspects of behavior in patients who may or may not directly present symptoms of psychological disturbance.

2. The ability to diagnose correctly the condition of patients who are emotionally disturbed and who may be expressing their distress in physical, psychological and social symptoms. This implies a reasonably sound understanding as to what comprises zones of healthy and sick behavior in our society.

3. The knowledge as to what the general physician can do and should do in the management of emotionally ill people who become sick; in the management and treatment of emotionally sick people who may or may not have physical symptoms; and in the emergency management of delirious, suicidal, or acutely stricken patients, as well as the excited, mentally defective, and the aged.

4. The knowledge as to what the general physician should not at-

2. Caveny, E. L., *J. Nat. M.A.*, 47:388-392,1955.

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tempt in the care of the mentally sick, which includes a sound understanding of the methods of intellectual referral to psychiatrists, hospitals, and clinics.

The patient, on seeking the services of the doctor, confronts him with certain complaints, problems, or symptoms—physical, psychological or both. The physician should determine the nature and cause of the difficulty, and lend assistance in its elimination. Whatever techniques he uses are directed at revealing the psychological as well as the physical technique, that of a life history, the physician can proceed in his usual way with patients and learn what is necessary for adequate evaluation.[3] It will be found most helpful to employ the same diagnostic procedure in all cases. Such an approach will enable the physician to see psychiatric and physical aspects of illness in proper perspective.

PSYCHOGENIC FACTORS

Psychological complications cannot be eliminated by merely finding a physical cause of the complaint or symptom. Nor does failure to find physical evidences to account for the disorder warrant the assumption of a functional illness. The competent physician does not omit examination of the heart because the presenting symptom of the patient refers to the stomach; nor does he omit study of psychogenic factors because the complaints are "explained" by physical findings. Psychological factors are said to be responsible in part for the symptoms in half of all patients.

For best doctor-patient relationship, it is just as important that the doctor know his own personality as that he know the personality of his patient. That it is possible for the physician to do his daily work with complete confidence in his physical examinations does not prove that this holds true for the psychological aspects. A functional complaint by a patient may stir up a negative resentful attitude on the part of a physician. He may look upon such a patient as "only neurotic" and prescribe sedatives for an indefinite period, when all that is required is a healthy, friendly curiosity about the emotional reactions of the patient and a critical, watchful attitude towards his own emotional responses.

The physician has years of training and experience of physical illness about which the layman has little knowledge. That gives him a position of authority, and people tend not to dispute his word. Everybody has had experience of problems of emotions and human behavior, and everybody has some opinions on the subject, thus lessening the physician's position of authority. Fearing the questioning of his position of authority, the physician will frequently steer shy of broaching psychophysiologic causation and illness.

PSYCHIATRIC REFERRAL

Further, in a psychogenic illness the patient cannot carry out the directions of the doctor as readily as he can in a physical illness. These are situations to be approached by the uncovering process of psychotherapy, and the depth to which this process goes is the determining factor the physician uses in requesting psychiatric consultation.[2]

3. Ziskind, E., Psychophysiologic Medicine, Lea and Febiger, Phila., Pa., 1954.

In medical practice there arise many psychiatric situations requiring early recognition and prompt attention on the part of the physician; they may be potential, near or actual emergencies. There are warning and danger signals, as well as certain conditions which are more prone to prove to be emergencies. The doctor should be familiar with these. The following remarks will be limited to those conditions which are considered of functional origin.

EARLY OR INCIPIENT SCHIZOPHRENIA

This condition may be encountered in any area of medical practice, and is not limited to the young. The best therapeutic results are obtained in the earlier phases. Recognition in the incipient stage is not easy, but is possible with careful, time-consuming study. The keynote is a tendency towards seclusion. The patient may withdraw within himself. He may lose emotional contact or interest in his family, friends, work, or school. No longer does he show the least interest in social activities or his former hobbies. Eccentricities and oddities of behavior are prone to occur. The person may say, "Something is happening to me." By this time it will be noted that disintegration of the personality is in the offing, and the physician should take steps appropriate to the situation.

DEPRESSIONS

Depressions, today, have a good prognosis, tending to spontaneous remission or steady response to drug or electroconvulsive therapy. However, a fair number of such persons die by suicide. All depressive patients are potential suicides. Whenever a doctor has elicited a history of suicidal intention he should not permit the patient to leave his presence unattended. Only certain depressions require hospitalization, but any patient who shows suicidal preoccupation should be placed where he will be well protected against himself.

THE HYPOMANIC PATIENT

The much disturbed manics are not likely to comprise an emergency, because they are so active they soon bring about care and protection. It is the less disturbed, or hypomanics, that go unrecognized, and become hazards to themselves or their family by their poor judgment. The wreckage left in the wake of such patients involves ruined marriages, illegitimate pregnancies, or wild spending sprees. Such calamities are preventable only by the alertness of the physician. These patients can be treated successfully by use of some of the newer drugs and electroconvulsive therapy.

HYSTERIA

There are a number of acute emotional disturbances of functional origin which are characterized by loss of adequate behavioral or thinking control. Such conditions may be manifested by uncontrolled excitement, as in acute hysterical reactions. This type of disorder might be observed in a physician's office or on a house call. Anxiety on the part of the attending physician may lead him to use hasty and erroneous methods in handling, such as immediate heavy sedation and restraint, before any evaluation is carried out.[4] Sedatives should be withheld pending an attempt to determine what is being represented by the

4. Herlihy, C. E., & Plazak, D. J., *U.S. Armed Forces M.J.*, 7:1,1956.

disturbed behavior. Someone present may know something of the onset of the disorder, and have an idea what the patient's previous difficulties have been. It should be borne in mind that behavioral excitement may result from organic conditions, such as head injuries, which often represent transient situational behavior in response to specific stress.

USE OF SEDATION AND RESTRAINT

A conveyed, interested and calm approach to the patient will often result in the improvement of his behavior and lessen need for further immediate therapy. If this calm approach does not quiet the patient, then the physician must consider the use of appropriate sedation or restraints. When restraints are necessary, sheets used as a wrap-around usually suffice. For this type of condition, one of the most effective sedatives is a combination of 1.5 mg. apomorphine hydrochloride and 0.4 mg. to 0.6 mg. of scopolamine hydrobromide administered hypodermically. The scopolamine may be repeated at intervals of three to five hours as necessary.

THE VIOLENT PATIENT

Avoid all semblance of aggressiveness in approaching the extremely disturbed or violent patient. A firm approach to the patient with appropriate explanation, using a show of adequate numbers of attendant personnel and without the use of physical force or restraint of any kind, frequently will quiet the patient. Aggressive action and verbalization towards the patient serves no useful purpose and usually indicates the physician's feeling of inability to deal with the problem.

SUMMARY

Psychiatric conditions comprise a major component of the present-day practice of medicine. All physicians are confronted by these illnesses and have a responsibility for the emotional health of their patients on a parity with the physical health. They no more have the privilege of brushing aside the behavioral disorders, emotional and nervous illnesses, than they have of disregarding the undetermined fevers and the undiagnosed pains.

ORIGINAL ARTICLE

The Role of the Physician in Automobile Safety

Physicians can do much to convince others of the importance of safety devices and of legal restrictions to prevent hazardous drivers or poor driving conditions

LEE T. FORD, M.D.,* *Saint Louis, Missouri*

In 1956, the lives of 40,000 persons were snuffed out, and some 1,400,000 were injured by motor vehicles.[1] This is a 4% increase over the 1955 figure of 38,426. The National Safety Council has estimated that in 1966, continuing at the present rate, we will have 53,000 auto deaths. It is estimated that each year one car in 12 is involved in a serious accident.

CAUSATIVE FACTORS

In fatal auto accidents, violation of a speed law is a factor in one out of three and alcohol is a factor in one out of four such accidents. A careful study in Delaware in 1955 concluded that a drinking driver was involved in 40% of fatal auto accidents.

AS A CITIZEN AND AS A DOCTOR

This problem should concern everyone — especially physicians, not only from a professional viewpoint but also a personal one. Any doctor may be called upon to render first-aid or definitive treatment to the victims of an auto accident. Members of doctors' families are exposed daily to the hazards of the road. The physician has the opportunity and duty, as any citizen, to promote automobile travel safety, plus the opportunity and duty as a member of the

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1. Accident Facts, National Safety Council, 1956 Edition, Chicago, Illinois.

profession devoted to the preservation of health and life.

STUDIES AND IMPORTANT FINDINGS

To DeHaven and Moore[2] should go much credit for studying safety factors in the operation of motor vehicles. Their crash research began in 1942 with light airplanes. They later turned their attention to automobiles. Their survey now includes accidents which occurred in ten states and one city. As of a year ago, they had studied 2,600 such accidents from police records, photographs and medical reports. These data were then computed by I.B.M. machine. The most important finding is that ejection from the automobile doubles the chance of injury or death. When a car overturns there is a 73% chance of ejection from the vehicle if there are no safety belts or other safety measures. While safety belts are most important, safety locks, safety windshield glass, a steel top and center posts all contribute to safety.

MANUFACTURERS TAKE SOME ACTION

In recent years, several automobile manufacturers have stressed such safety features in their new cars. The public's response came as a surprise, since it is not the usual sales practice to advertise that a product may be dangerous to life or limb.

AMERICAN COLLEGE OF SURGEONS AND A.M.A.

For several years the Committee on Trauma of the American College of Surgeons has endeavored to stimulate the automobile manufacturers to provide more safety features in their cars. Recently, The Board of Trustees of the American Medical Association appointed a "Committee on the Medical Aspects of Automobile Injuries and Deaths" to investigate and make recommendations on this tremendous problem of highway slaughter. At the 1956 meeting of the A.M.A. in Chicago, a Panel on The Medical Aspects of Crash Injury was held. Twelve papers were read discussing the problem from many angles. In his Chairman's addess, Fletcher Woodward[3] estimated that 2 to 3% of auto accidents may be due to the physical condition of the driver; if sleep and fatigue are included, the figure would be nearer to 8 to 10%. He also called attention to the apathy to this high auto death and injury rate of the public, traffic court judges, and legislators.

SEEING AND HEARING REQUIREMENTS

It was stated by Guerry,[4] that minimum visual requirements for driver licensing vary from a visual acuity of 20/30 to 20/70 in different states, and that one state has no visual requirement. Only 18 states test for depth perception and only 9 states try to determine a driver's visual field. Poor visual acuity and poor depth perception play a part in many accident prone individuals. Guerry urges that a Board of Ophthalmology set up minimum standards for visual requirements for an automobile driver and that these standards be adopted by all states. Drivers should meet a certain hearing requirement, if necessary with a hearing-aid. Persons with severe vertigo should not drive during an attack, possibly not at all.[5]

2. DeHaven, H., et al., Aircraft Safety Belts; Their Effects on the Human Body, Cornell University, New York, New York.
3. Woodward, F., *J.A.M.A.*, 163:225,1957.
4. Guerry, D., III, *J.A.M.A.*, 163:227,1957.
5. Boyes, L. E., *J.A.M.A.*, 163:229,1957.

ORTHOPEDIC CONSIDERATIONS

Jacob Kulowski[6] called attention to orthopedic conditions such as vertebral arthritis, osteoporosis of the spine and ankylosis of major joints, which may make an individual especially susceptible to injury in an automobile crash. Such persons should equip their cars with every available safety device.

ACCIDENT PRONENESS

A man may "drive as he lives" according to McFarland.[7] After having studied accident proneness in many individuals, he states that the accident repeater may be one with little respect for authority, of poor social adjustment, or of emotional instability. The physician is in a position to recognize such individuals and guide them to education in safety. After rigidly adhering to a program of physical and psychological testing of drivers for a large transit company, Brandaleone[8] was able to report a drop in the number of accidents from 6,377 in 1945 to 3,130 in 1955, a considerable financial saving for the company, and less absenteeism of workers.

THE THREE MOST IMPORTANT FACTORS

In discussing the Preventive Medical Aspects of Automobile Crash Injuries and Deaths, Miller[9] listed as the three most important factors, highway design, improved design of the automobile, and licensing as drivers only those physically and psychologically qualified.

CONVULSIVE DISORDERS

Mayfield[10] states that 5% of the general public is subject to convulsive disorders, many under such control as to make driving safe, others may not be under such control. A physician who knows of such a patient faces a dilemma as to whether or not this privileged information should be revealed to licensing authorities.

WHAT MUST BE DONE

Concerted action must be taken by government—local, state and federal; by the automotive industry, from designing and manufacturing to sales and service; by organized medicine, and by the individual doctor. Car manufacturers are becoming more responsive to the influence of doctors as individuals and through medical organizations in designing safer automobiles.

WHAT THE DOCTOR SHOULD DO ABOUT HIS AUTOMOBILE

The attitude of the individual physician is that there is not much that he can do. This is not true. For himself and his own family, he should provide maximum safety protection in his own automobile, and convince himself and them of the importance of using these safety devices. He should not use or allow his family to use an open or convertible type car. He should install safety belts in front and back seats and see that they are used in both city and country driving. His car should be one with a steel top and a center post, not a popular "hard-top." Safety door catches are essential, as is padding on the instrument panel or cowling. The four-door automobile with the fixed back of the front seat is safer in a front-end collision, since it prevents the back of the seat and possibly the passengers in

6. Kulowski, J., *J.A.M.A.*, 163:230,1957.
7. McFarland, R. A., *J.A.M.A.*, 163:233,1957.
8. Brandaleone, H., *J.A.M.A.*, 163:237,1957.
9. Miller, S., *J.A.M.A.*, 163:240,1957.
10. Mayfield, F., *J.A.M.A.*, 163:245,1957.

the back seat from being thrown forward.

Risk of a whiplash injury would be greatly reduced by raising the backs of auto seats to occiput level. He should insist on using good quality blow-out resistant tires. His car should be examined and serviced regularly, particular attention given to steering and brakes.

INFLUENCING PATIENTS

The physician can do his patients a favor by urging them to have in their cars all of the safety features named, or at least the most important ones. He should explain to patients, whom he treats for injuries sustained in automobile accidents, how certain safety features might have prevented their injuries. In the past year, three persons in Saint Louis were killed in otherwise relatively minor automobile accidents. In each case, the driver was thrown from the car to the pavement and died as a result of a head injury. A seat belt would have prevented ejection from the vehicle.

INFLUENCING AUTOMOBILE PEOPLE

The physician should encourage his automobile dealer, his service station, and even the automobile manufacturers to make a concentrated effort to sell safety equipment to their customers. Physicians who do work for firms using a large number of automobiles or trucks should urge the use of safety devices in all such vehicles. The physician should instruct his family in safe driving practices. He should also encourage his children to take advantage of supervised driver's instruction courses which are offered in many high schools.

MORE ABOUT PATIENTS

If a patient has a condition which might make driving a vehicle dangerous, particularly a convulsive disorder, the physician should try to convince him that it is not safe for him to drive even though the law does not prevent him from having a license. He should warn patients concerning the danger of becoming fatigued on long automobile trips and suggest a stop every few hours for rest and refreshment. He should follow this practice himself.

BETTER LAW ENFORCEMENT

If a physician is in a position to do so, he should advocate more severe punishment for persons found guilty of drunken driving or of habitual or repeated violation of traffic laws.

He should carry adequate automobile insurance and should encourage his patients to do so. Many persons who are passengers in automobiles today have medical conditions which may be "aggravated" even by a minor collision.

The physician may be in a position to encourage improvement of highway engineering and traffic systems—local, state or federal.

TO SELF AND FAMILY

First and foremost, the physician owes it to himself and to his family to provide the maximum of practical safety devices in the automobile or automobiles that he owns, and to see that they are used. Having done this, he should encourage others to do the same. During the past year it has been gratifying to see the increasing number of seat belts and other safety devices in physicians' cars in the staff parking lots of Saint Louis hospitals.◄

ORIGINAL ARTICLE

Two Important Considerations in the Diagnosis of Abdominal Cancer

These two factors, often overlooked, may be of great value in the establishment of an earlier diagnosis of cancer of the colon or stomach

T. BRANNON HUBBARD, M.D. & T. BRANNON HUBBARD, Jr., M.D., *Montgomery, Alabama*

As long as our methods of treatment remain the same, it is evident that the only way in which we can increase the curability of gastrointestinal cancer is by earlier diagnosis. It is well known that the average cancer of the colon or stomach will, at the time of surgery, give a history of delay in treatment of as long as six months, this delay being the fault of the patient in half of the cases and of the doctor in the other half.

The purpose of this paper is not to cover all aspects of the diagnosis of such cancers, but to stress two pitfalls which, in our experience, are relatively frequent, but which have not received much emphasis in medical literature.

DIARRHEA OR LOOSE STOOLS

In the writer's experience 66% of obstructing cancers of the colon, by that time frequently incurable, will give a history on careful questioning of either frequent stools or loose stools as the first change in their bowel habits, and this change often antedates the occurrence of obstruction by a year or more. These frequent stools sometimes alternate

with several days of moderate constipation. Though the latter symptom is the one dwelt on by both physician and patient when obstruction becomes severe, nevertheless several months earlier when the patient was first seen by a doctor the loose, frequent stools were many times his presenting complaint.

The mechanism of the production of these loose stools is obscure. Conceivably they could be caused by hypermotility of the bowel due to the irritation of a secondarily infected cancer. More logically they could be due to the bowel becoming hyperactive in an effort to bypass an as yet incompletely obstructing lesion, and thus the stool is carried along more rapidly, before the normal amount of water is absorbed from it.

Most textbooks of medicine list "any change in bowel habits" as a possible sign of colon cancer, but it is the writer's impression that to most doctors this implies only constipation. The fact is exemplified by a recent experience. A man, 65 years of age, was admitted to the hospital with complete obstruction of the sigmoid colon due to a cancer. A letter from his family physician read as follows: "This is a most unusual case. This man is obstructed by a carcinoma of the colon. Undoubtedly the cancer has been present for some time, and yet I have been treating Mr. — for the past year for diarrhea."

It is difficult to say how practical it would be to perform proctoscopy and barium enema examination on every patient over 40 who complains of frequent or loose stools. Certainly, however, if such symptoms persist for more than two weeks, or if they recur after subsiding for a week or so, then such a patient deserves to have a neoplasm ruled out by endoscopy and x-ray.

THE INSIGNIFICANCE OF "NEGATIVE" X-RAYS

When a patient with an incurable cancer of the gastrointestinal tract arrives under the care of a surgeon, one often finds that several months or a year previously a thorough examination had been made, that nothing had been found, and that the patient had been allowed to continue under observation for 6 months or a year. Obviously this delay in many instances means the difference between curability and incurability.

Almost half a century ago Sir William Osler wrote as follows: "Nowadays, when exploratory laparotomy may be advised with such safety, the surgeon often makes the diagnosis. The practitioner should recognize the fact that there are cases of cancer of the stomach in which a positive diagnosis can not be reached for weeks or months by any means at our command except exploration."

We have for the past four years carried out a similar policy, suggesting to any patient over the age of 40 years who develops abdominal symptoms, undiagnosed by thorough x-ray and endoscopy, that he should undergo exploratory laparotomy, if the symptoms do not completely respond to medical treatment.

CASE HISTORIES

Case No. 1: This 73 year old white man was first seen by us in April, 1953, presenting the story that for 5 months he had had abdominal pain, worse on the right side, which was relieved by passing

gas. Over the same period he had lost 10 pounds, and had felt progressively weaker. X-rays had revealed no pathology in the stomach, small bowel, colon, or urinary tract. Exploratory laparotomy to rule out malignancy was performed April 21, 1953.

A large tumor mass was found involving the ileo-colic mesentery. In spite of its size it was localized, and was resected, together with the terminal ileum and right colon. Pathological examination revealed Hodgkin's disease, and postoperatively he received x-ray therapy to the operative site. Today, 4 years after operation, he is healthy, asymptomatic, and leading an active life.

Case No. 2: This 69-year-old white woman was admitted to the hospital on April 24, 1953. She gave a story of left upper quadrant abdominal pain and "gas pains about the heart" after eating. The symptoms had been present for about 6 months and were growing worse, in spite of conservative treatment which included a bland diet and antispasmodics. She had lost 20 pounds over the same period. Complete x-ray examination of the abdominal organs revealed no pathology except for a moderately large diverticulum of the second portion of the duodenum and diverticulosis of the sigmoid colon. Exploratory laparotomy to rule out malignancy was done on May 1, 1953.

In addition to the duodenal and colonic diverticula, there was an ulcer crater on the lesser curvature of the stomach just distal to the incisura. This ulcer measured 3.5 cm. in greatest diameter and had perforated through the stomach wall into the lesser omentum. There was considerable induration about it and it could not be differentiated from a cancer. Therefore a radical resection was performed as though for malignancy. Recovery was uneventful and the patient remains well at the present time.

Although pathological examination revealed this to be a benign ulcer, it is doubtful, due to the depth of perforation and extent of scarring, that healing would ever have occurred. Moreover, having perforated quite close to the left gastric artery, hemorrhage would have always been a threat. More important to this discussion, however, is the fact that the lesser curvature of the stomach was very distorted and indurated and a similar lesion could easily be malignant. Yet gastrointestinal x-rays showed no abnormality 3 days before operation was performed.

Based upon our experience with a number of cases similar to these two, it is our impression that such exploratory laparotomies are practical, that definite pathology will be found in one-third of such cases, and that the exploration is relatively harmless in those patients in whom nothing is found. Of course it should be stressed that such a procedure should not be done until the patient has been thoroughly studied by a competent radiologist as well as by proctoscopy. In addition, it is probable that only patients over the age of 40, who have developed symptoms of less than 6 months duration, should be included.

SUMMARY

Two factors in the diagnosis of gastrointestinal cancer have been stressed. These are:

First, diarrhea may often be a sign of early colonic cancer.

Second, any patient over 40 who develops for the first time abdominal symptoms which do not respond to medical treatment, deserves exploratory laparotomy, even if all x-rays are negative, for the latter are by no means infallible.◄

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ORIGINAL ARTICLE

Use of Elixophyllin in Severe Chronic Asthma

This oral theophylline preparation was tested on 56 patients who had intractable, chronic asthma, and many of them reported quick, satisfactory relief

SOLOMON SLEPIAN, M.D.,* *Brooklyn, New York*

Persons with asthma may be divided into two main categories: those having acute attacks and those with chronic asthma. Patients in either group may have symptoms characterized as mild, moderate, or severe.[1] Chronic asthma allows almost no respite from either symptoms or physical signs. There are only variations in the intensity of dyspnea, wheezing, cough, fatigability, or night paroxysms.

Every effort must be made to determine what precipitates the asthmatic attacks, and to suggest measures to prevent their recurrence.

For relief of the acute attack, we depend upon the use of the sympathomimetics and xanthine derivatives. In most instances the paroxysm can be controlled by the judicious use of one or combinations of these drugs.

CHRONIC ASTHMA

The treatment of chronic asthma is still largely empiric. In many instances failure to obtain ample relief leads these patients to familiarize themselves with the medicinal formulary for asthma and also to resort to the use of nostrums. By trial-and-error, patients select those

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Acknowledgement: The author is grateful to Dr. Frank P. Panzarella for his helpful suggestions in rendering this clinical report.

1. Unger, L., Bronchial Asthma, Charles C. Thomas. Springfield, Ill., 1945.

agents which they find to be most helpful during certain phases of the attack. These include oral medications, rectal instillations, and the newer aerosols, as well as the older medicated cigarettes or medicated fumes for inhalation.

Aminophylline, theophylline in combination with ethylenediamine, has been widely used for asthma since Young and Gilbert[2] showed it to be effective in controlling bronchospasm induced by histamine. It was also shown to produce a salutary effect on the edema of the bronchial mucosa. When administered intravenously, *slowly* and in dosages of 2½ to 3¾ grains, it can stop an asthmatic attack promptly. Fatalities from its intravenous use have occurred in individuals with cardiac disease.[3] Intravenous aminophylline also tends to restore patients to normal responsiveness to epinephrine when they become epinephrine-fast. In many emergency clinics aminophylline is given intravenously immediately if epinephrine does not ameliorate an asthmatic attack. Aminophylline's usefulness when given by other routes is not so great. This may be due to slow absorption giving blood theophylline levels too low to produce a therapeutic result. Nevertheless, aminophylline is prescribed, alone or with other drugs, by mouth, by rectum, intramuscularly and as an aerosol, for the symptomatic relief of patients with chronic asthma.

Alcohol, given intravenously, is recommended for the acute attack which does not respond to epinephrine or intravenous aminophylline. For this purpose ethyl alcohol is supplied as a 5% solution in glucose and saline. In some instances Brown[4] claims superiority for ethyl alcohol over aminophylline.

A new theophylline preparation (Elixophyllin®)* has been recently brought forward as an advance in the control of asthma. It is an alcohol-water solution of theophylline designed for oral use. The xanthine in this preparation has been used for a long time to control paroxysmal nocturnal dyspnea and Cheyne-Stokes breathing, and for myocardial failure as well as for allergic asthma.

Elixophyllin, a pleasant tasting, aromatic and red colored liquid, contains 1⅓ grains (80 mg.) of theophylline and 45 minims (3 cc.) of ethyl alcohol per tablespoonful. The advantages claimed for this preparation are absence of gastric intolerance, speedier and more efficient absorption of theophylline[5] and the beneficial additive effects of the alcohol.

A study was undertaken to evaluate the liquid in a manner simulating the short-term therapeutic trial employed by the practicing physician to determine for himself the effectiveness, patient acceptance and preference of a new product recommended for asthma. No attempt was made to compare it with any other xanthine preparation or drug used for asthma.

PATIENTS SELECTED FOR TRIAL

For clinical trial 56 adults, a few from the writer's private practice and the majority from the clinic, were selected. All had chronic asthma either of the atopic type or the

2. Young, R. H., & Gilbert, R. P., *J.A.M.A.*, 114: 522,1940.
3. Merrill, G. A., *J.A.M.A.*, 123:115,1943.

*Elixophyllin, Sherman Laboratories, Detroit, Mich.
4. Brown, E. A., *Ann Allergy*, 5:193,1947.
5. Schluger, J., et al., *Am. J.M. Sc.*, 233:296,1957.

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references: (1) Smith, R. T.; Krum, K. M.; Peak, W. F. and Herrmann, I. F.: J.A.M.A. *160*:745 (Mar. 3) 1956. (2) Bettel, E.: Am. Pract. & Digest Treat. *8*:443 (March) 1957. (3) Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316 (March) 1955.

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DOSAGE: Average, 2 cc. intramuscularly or subcutaneously, daily or thrice weekly until improvement is obtained. In severe cases, 5 cc. may be administered initially, and subsequently reduced.

SUPPLIED: As aqueous solution in 10- and 20-cc. multiple-dose vials.

1. Pansky, M., and Goldberg, N.: New York State J. Med. 53:2238, 1953. 2. Nierman, M. M.: J. Indiana M. A. 45:697, 1952. 3. Knox, J. M.: Preliminary Report, U. S. Navy Medical News Letter, vol. 20, Nov. 14, 1952. 4. Lebeau, I. L.: Clin. Med. 59:364, 1952. 5. Poole, W. L.: To be published. 6. Kalb, C.: To be published. 7. Marshall, W.: M. Times 79:232, 1951.

*Case report.

Two months later: "the skin was dry . . . the whole face markedly improved"*

Professional Literature Available

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non-immunologic type.[6] Several had also seasonal and perennial nasal allergy, and a few of the older patients had cardiac disease. Chronic asthmatics who were fairly comfortable on a set regimen, and those who had an exacerbation due to lapse of treatment or complicating acute respiratory infection, were excluded. The test group consisted of the patients who were doing poorly with ephedrine alone, or in combination with other drugs; aminophylline, tablet or suppository; various aerosols; iodides; and some who were also taking prednisolone. Most of them were getting parenteral treatment with house dust extract, catarrhal vaccine and with pollen extract when necessary. Since the status of each patient was fairly constant while receiving the diverse medications during the several weeks to months prior to his selection, a simultaneous control study was not attempted.

METHOD OF REPORTING

The preparation was dispensed in quantities of one or two pints; patients directed to take doses of two tablespoonfuls three times a day, and three tablespoonfuls during an exacerbation of symptoms. They were to stop all other medication if possible, but there was no insistence that this be done.

At the next visit, each patient was asked specifically:

1. Did you have relief after taking the medicine?
2. How soon after taking two or three tablespoonfuls was there relief?
3. How long did the good effect last?
4. Did you have to use other drugs while on the new medication?
5. If you also had to use other drugs, did you take less of them than previously?
6. Were there any unusual effects after taking the medicine?
7. Do you prefer this to the various medications which you usually took?
8. Do you wish to continue taking this preparation or are you indifferent about using it?

On the basis of the answers to these questions, patients were classified as having good results or indifferent or unsatisfactory results.

RESULTS

Of the 56 patients, 12 failed to report. The remaining 44, 23 males and 21 females, ranged in age from 23 to 75 years. Their asthma had been present from one to 41 years.

It was concluded that 21 of the 44 had good results, and that 23 had equivocal or unsatisfactory results. There were practically no side effects.

Case summaries of three patients are presented:

CASE NO. 22

A woman, 52 years of age, has had allergic asthma for 22 years. During the past several years, attacks have been occurring daily. Between attacks, cough with expectoration of thick, tenacious sputum, which was hard to raise, gave her great distress. Recently she had several episodes of hemoptysis. X-rays revealed marked emphysema. Tuberculosis, bronchectasia and neoplasm were ruled out. She was being treated with house dust and stock catarrhal vaccine. Potassium iodide, ephedrine, aminophylline in the form of oral tablet and suppository, as well

6. Swineford, O., Jr., *J. Allergy*, 25:151,1954.

as sedatives, were given for symptomatic relief.

For one week she was started on two tablespoonfuls of Elixophyllin three times a day. This gave her speedy and satisfactory relief during the test period, and is an example of a good result.

On continuing medication in above dosages, at times increasing to three tablespoonfuls, she obtained longer intervals of relief, and she was able to raise sputum with much greater ease. She now takes less of her other medications during the day and one tablespoonful of Elixophyllin at night keeps her comfortable.

CASE NO. 34

A woman, 63 years of age, has had allergic asthma since childhood, but was symptom-free for a number of years. Attacks started again in 1944, about the time of her menopause.

Skin tests were positive to feathers, dust, and a number of foods. Feathers were eliminated from her environment and the suspected foods were avoided. She received injections of house dust, and estrogens for her menopause. Ephedrine, phenobarbital and potassium iodide were given for symptomatic relief. There was slight improvement for a while, and then symptoms recurred with greater severity and frequency particularly after respiratory infections. Injections of catarrhal vaccine were added to her treatment. Later, aminophylline by mouth and in suppository, as well as choline theophyllinate was added to her treatment. Nasal polyps were removed in 1955. Despite this treatment, she continued to have almost daily attacks, and frequent nocturnal attacks.

In April, 1956, Elixophyllin was prescribed, two tablespoonfuls three times a day for a period of one week, with marked clinical improvement. We consider this an example of a good result.

Patient continued on this regimen and she was able to cut down on all other medication gradually. She is now quite comfortable and takes only one tablespoonful of Elixophyllin in the morning, and one tablet of choline theophyllinate at night.

CASE NO. 35

A man, 62 years of age, has had asthma for 13 years, and a chronic cough for many more years. There is a family history of allergy. He now has almost constant asthma and marked breathlessness at rest, but particularly on exertion. He can walk no more than one-half block without resting and using his nebulizer. He is frequently harassed by a distressing cough. His dyspnea is not attributed to cardiac involvement, but to pulmonary disease.

He was found sensitive to feathers, house dust, hormodendrum and several foods. He was advised as to control of home environment and avoidance of suspected foods. He was being treated with iodides, expectorants and ephedrine. He was on xanthines and many other drugs used for asthma. He was treated by others with steroids at different dosage levels for about two years with poor results.

He was placed on Elixophyllin in doses of two to three tablespoonfuls three times a day. He reported no appreciable improvement with this medication after trial of one week. We consider this an unsatisfactory result.

SUMMARY

Forty-four patients with intract-

able chronic asthma who were taking various anti-asthmatic medications with insufficient or no relief reported their experiences with Elixophyllin in doses of two to three tablespoonfuls, three times a day. About one-half found this medication helpful and expressed a preference for it. There were practically no side effects from its use.

Transrectal Needle Biopsy in the Diagnosis of Prostatic Cancer

The open perineal biopsy stands as the most accurate means of corroborating rectal examination of evidence of presence of early operable carcinoma of the prostate gland. This method entails a major procedure, is not applicable by all surgeons and is not suited to quick screening of large numbers of patients. The perineal needle method, though quick and practical, lacks accuracy in the earlier stages of cancer. Forceps biopsy of the prostate gland directly through the incised rectal wall under vision has shown considerable merit, and has recently been simplified by introducing a relatively nontraumatic Silverman needle directly into the suspicious area of the gland through the rectal wall. This method requires no visualization, no speculum and no incision in the rectal wall. It requires only a few minutes, and is applicable by any physician who has manipulative skill and uses caution. It requires a minimum of facilities and equipment and in our experience has shown superiority over the perineal needle method. It allows direct access to the suspicious area.

Emanuel, M. & Foote, E. L., *J. Maine M.A.*, 48:234-238,1957.

The Accuracy of Diagnosis of Myocardial Infarction

A greater awareness of the possibility of underlying myocardial infarction might easily lead to a decrease in diagnostic errors

BRUCE C. PATON, M.D., M.R.C.P., Ed*., *Edinburgh, Scotland*

Accuracy in the diagnosis of myocardial infarction apart from being academically desirable is of great social, economic and medico-legal importance, not only to individuals but also to commercial and national institutions.

In this hospital 1,646 postmortem examinations were made during the two-year period 1954-1955. All these cases were reviewed and patients suspected clinically of having had a recent myocardial infarct, or found at autopsy to have had one, were selected for the purposes of this study. No case was included in which only an old infarct was found at autopsy, unless a recent infarct had been suspected clinically; nor any in which the clinical history related only to old episodes. The records selected for particular attention were:

1. The clinical diagnosis of a myocardial infarct was substantiated at postmortem examination.
2. The clinical diagnosis of myocardial infarction was not confirmed at autopsy.
3. Provisional diagnosis other than myocardial infarction had been made, but the patients were found to

*From the Department of Cardiology, Royal Infirmary, Edinburgh, Scotland.

have had, although not always to have died from, a myocardial infarct.

From the central files it was possible to trace the corresponding electrocardiograms, to check the ECG diagnosis made during life, and to correlate these with the autopsy findings. Twelve standard leads were recorded routinely, additional precordial leads occasionally.

During the period the hearts of nearly all the patients known to have had, or suspected of having had, a myocardial infarct were examined by pathologists with a particular interest in coronary artery disease, using either injection or serial slicing technics.

In 1954 and 1955 a total of 1,075 cases of myocardial infarction were diagnosed clinically in this hospital, and of these 247 patients (24%) died. A postmortem examination was performed in 214 of the fatal cases.

Group 1: Cases in which the clinical diagnosis of infarction was confirmed—57 cases in 1954, 61 in 1955, a total of 118 cases. Group II: A clinical diagnosis of infarction without confirmation at postmortem, 55 cases in 1954, 41 in 1955, a total of 96 cases. Group III: Cases in which myocardial infarcts, unsuspected clinically, were found at autopsy, 29 cases in 1954, 23 in 1955, a total of 52 cases.

FINAL DIAGNOSES IN PATIENTS SENT TO POSTMORTEM WITH QUESTIONS OF MYOCARDIAL INFARCT AND FOUND TO HAVE DIED FROM OTHER CAUSES

Final Diagnosis	1954	1955	Total
Cardiovascular			
Pulmonary embolus	7	7	14
Gross coronary sclerosis (no infarction)	4	10	14
Congestive failure: pulmonary edema	6	6	12
Aortic aneurysm, ruptured or dissecting	5	2	7
Pericarditis	4	2	6
Cor pulmonale	4	1	5
Mesenteric embolus	1		1
Aortic stenosis	1		1
Pulmonary:			
Pneumonia, pleural effusion	10	3	13
Atelectasis		2	2
Carcinoma	1		1
Associated with operations:			
Shock: bleeding	8	4	12
Fat embolism		1	1
Other conditions:			
Ruptured esphageal varices		1	1
Ruptured gall bladder		1	1
Ruptured gastric ulcer		1	1
Disseminated lupus erythematosus	1		1
Meningovascular syphilis	1		1
Hemochromatosis: cancer of liver	1		1
Lymphosarcoma	1		1
Total	55	41	96

SUMMARY

Two-hundred and sixty-six postmortem records of a consecutive series of patients found to have died from myocardial infarction, or suspected of dying from this cause in the Royal Infirmary, Edinburgh, during the years 1954 and 1955 have been reviewed.

In this hospital the accuracy rate in the diagnosis of myocardial infarction is surprisingly low, only 44% when the examples revealed at autopsy and unsuspected clinically are taken into account. The major diagnostic errors occurred in patients who died suddenly or presented in an atypical way.

A greater awareness of the possibility of underlying myocardial infarction in elderly patients with unexplained heart failure or pleural effusions, in patients with cerebrovascular accidents, and in postoperative patients whose condition inexplicably deteriorates might lead to a decrease in diagnostic errors.

About 50% of sudden deaths are due to myocardial infarction. Anyone who dies suddenly, having given

previous evidence, either clinical or electrocardiographic, of coronary artery disease is almost certain to have died in this way.

The electrocardiographic diagnosis of recent myocardial infarction is very accurate, and a clinical diagnosis alone without electrocardiographic corroboration when this is available, is no longer justifiable.

Am. J. Med., 23:761-768,1957.

Somnambulism

Sleepwalking is most frequent in childhood and adolescence. The sleepwalker's facial expression or the direction of walking may be indicative of the content of his dream or even the reason for the reaction. Sleepwalking children more often seem to be running *to* the parent or *from* punishment. Adults with unresolved or ambivalent feelings toward parent figures may be demonstrating the same sort of unresolved need.

Patients commonly are able to dress themselves, open doors, climb stairs, and perform other such activities while asleep. Although many somnambulists may be apprehensive about hurting themselves, apparently few incur injury. A young patient climbed out his window, on the twelfth floor of an apartment building, walked on an 18-inch-wide ledge to another window, climbed in it, and returned to his own apartment and bed without waking.

The personality of the adult who still walks in his sleep seems to be that of the immature and inadequate. Such persons are non-aggressive, socially well-behaved, and have limited ambition.

Recurrences are likely during times of emotional disturbance.

Psychiatric Bull., 7:46-47,1957.

General Anesthesia — A Preferred Method

The Shane-Ashman Method is advised to maintain light, non-fluctuating general anesthesia for even the poorest-risk patients with any type of surgery

ISIDORE W. TOWLEN, M.D., *Baltimore, Maryland*

Anesthetic agents which have stood the test of time are nitrous oxide, ether, the barbituric acid derivatives and cyclopropane. Nitrous oxide is often employed in the gas, oxygen, ether sequence, or in conjunction with intermittent doses of pentothal. In the latter case, considerable amounts of pentothal are needed to maintain the surgical stage of anesthesia. Postoperative somnolence is prolonged, and anesthesia is not nearly as satisfactory as when it is used in conjunction with cyclopropane.

ETHER

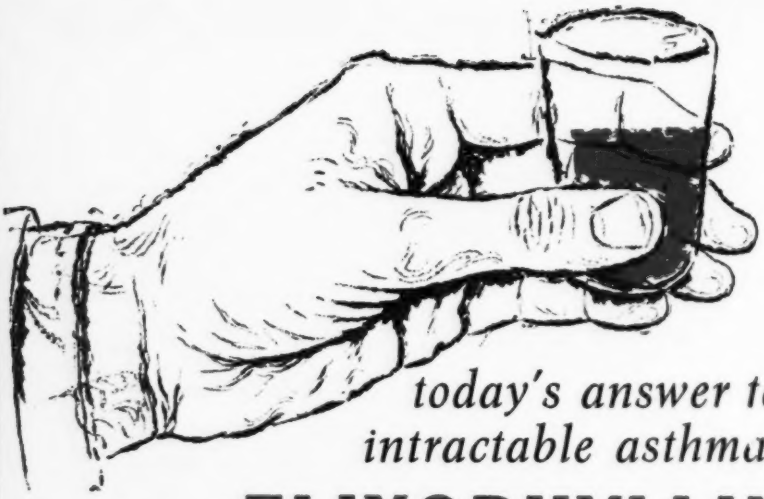
The popularity of ether is waning. It produces a shift in the acid-base balance, lowers the pH, alters liver and kidney function, promotes vomiting, and delays postoperative recovery. In children it is difficult to maintain an even plane of anesthesia; the danger of vomiting and aspiration of gastric contents is ever present.

EVIPAL

Evipal, the original ultra-short-acting barbiturate, because of its freedom from initiating laryngeal spasm, has been staging a remarkable comeback. There are fewer electrocardiographic changes incident to the use of this drug.

INDUCTION AGENTS

Pentothal is not an anesthetic per



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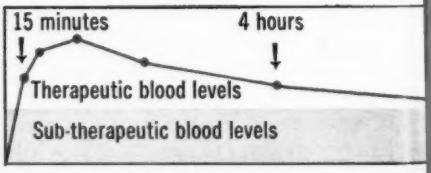
45 cc. *(three tbsp.)* on retiring;
45 cc. *(three tbsp.)* once midway between above doses *(about 3 P.M.)*



After two days of therapy the size of doses should be slightly decreased.
Each tablespoonful contains: theophylline 80 mg., alcohol 3 cc.
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**Reprints of these studies on request.*

se. It is merely an induction agent to be used to produce momentary unconsciousness, after which anesthesia is produced and maintained by employing gaseous or liquid anesthetics or mixtures of them. Pentothal is hazardous in the extreme, both from the standpoint of initiating laryngeal spasm and the danger of overdosage.

A new barbituric acid derivative, neraval sodium gives promise of being preferable to both pentothal and evipal as an induction agent. The danger of initiating laryngospasm with this agent seems to be minimal, and recovery from it is extremely rapid.

CYCLOPROPANE

Cyclopropane was compared with ether by Virtue et al.[1] Rats were anesthetized with ether or cyclopropane and then given irreversible shock. In observing the survival time, it was found that those animals given cyclopropane lived longer than those given ether.

For cardiac surgery and poor-risk patients with recent coronary and other types of heart disease, who must undergo surgical operations, Etsten[2] has demonstrated that light cyclopropane anesthesia is far safer than ether anesthesia and that the arrhythmias of cyclopropane occurred only when high concentrations were used.

In 1948, Shane[3] demonstrated that rendering a patient momentarily unconscious with evipal or pentothal, following with a mixture of 10% of cyclopropane (20 to 25% is required to produce and maintain surgical anesthesia) and 45% each of nitrous oxide and oxygen, and using a *semi-closed* absorption system, he could maintain light, non-fluctuating plane-one surgical anesthesia for a number of hours, without danger of overdosage; and that this mixture could be used on the poorest-risk patients for any type of surgery. Since its introduction eight years ago, some minor changes in technique have been made and it is now known as the Shane-Ashman (S-A) method of anesthesia.

THE SHANE-ASHMAN METHOD

The S-A method permits some cyclopropane to escape into the atmosphere with each exhalation. With the patient blowing off the expired gases through the open exhalation valve, and not re-breathing his own breath (as he would in a *closed system*), he can much more efficiently dissipate excess heat, moisture, and most important of all, carbon dioxide. Excessive carbon dioxide tension weakens the heart beat, favors the production of oxygen tension and arrythmias.

CLOSED-SYSTEM METHOD CONDEMNED

The insidious build-up of carbon dioxide which occurs in a *closed* system results in volatile acidosis, lowered pH and elevated blood pressure. Removal of the mask after prolonged anesthesia when this system is used may result in a precipitous drop in blood pressure, often to shock levels, after the patient leaves the operating room and blows off the accumulated carbon dioxide.

The closed system of anesthesia, long proclaimed as the *only* method by which cyclopropane should be administered, should be condemned

1. Virtue, R., et al., *Anesthesiology*, 17:60-65,1956.
2. Etsten, B., Closed circuit TV broadcast from Tufts Medical School by Upjohn Co., Feb. 15, 1956.
3. Shane, S. M. & Ashman, H., *South. M.J.*, 45:591-595,1952.

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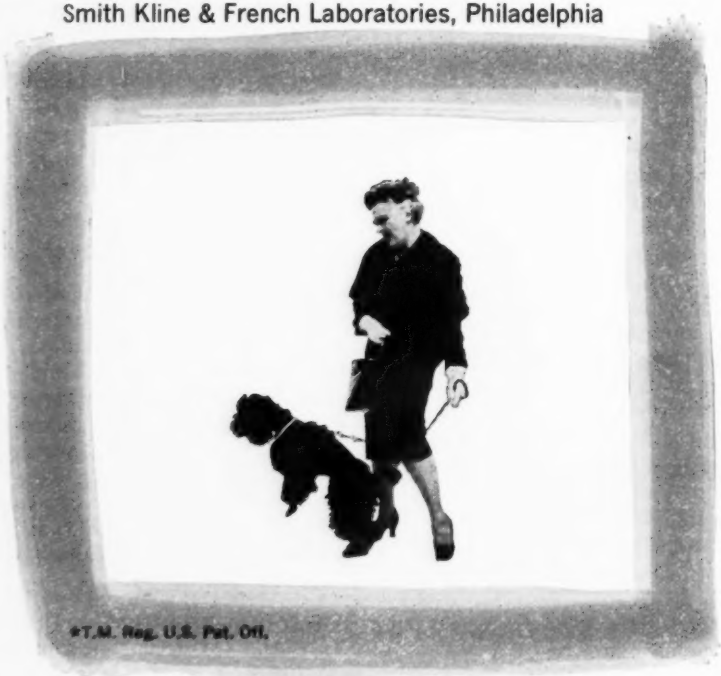

*T.M. Reg. U.S. Pat. Off.

for additional reasons. Baumgarten[4] demonstrated that water is formed when carbon dioxide unites with the soda lime (which is supposed to absorb all the carbon dioxide). Humidity in such a system may rise to such levels as to interfere with the vaporization of water and cause a rise of body temperature. This in turn increases the amount of water the gases will hold, causing a lowering of oxygen in the inspired air.

ADVANTAGES OF THE S-A METHOD

Extremely rapid induction and return to consciousness even after prolonged anesthesia; less hypercapnia, post-operative shock, atelectasis, nausea and vomiting than after the use of other general anesthetic methods.

Freedom from danger of anesthetic overdosage by reason of the anesthesia being kept on an even plane.

Safest method for the poorest-risk patient, regardless of age or operation, if a general anesthetic is to be employed.

Less fluctuation in pulse and blood pressure than with any other type of general anesthesia during and after its administration, provided fluid and blood loss are adequately replaced.

Less explosive than any anesthetic combination which contains ether as an ingredient.

The S-A method of anesthesia has been used for the past few years at Doctors Hospital, to the exclusion of all other methods, when general anesthesia is employed for general surgery and obstetrics. It is remarkably reliable and simple to administer. In obstetrical cases evipal or pentothal induction is *not* employed, as these agents traverse the placental barrier in about four minutes and exert a depressing effect on the respiratory center of the infant. Demerol and scopolamine are used instead to produce amnesia before the gases are administered.

4. Baumgarten, O., et al., *Anesthesiology*, 15:188-195,1954.

Maryland M.J., 6:270-273,1957.

Isoniazid as a Cause of Optic Neuritis and Atrophy

In two cases, optic neuritis and, eventually, atrophy occurred after the use of isoniazid. Serious optic disturbances attributable to isoniazid have been reported in a total of four cases, including these two. The physician should be aware that serious visual lesions may follow the use of isoniazid. If all patients receiving isoniazid are given pyridoxine daily, the incidence of neurotoxic effects will be reduced.

Kass, I., et al., *J.A.M.A.*, 164:1740-1743,1957.

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Uremia: Its Reversible Aspects

Close attention to minute details may change an apparently terminal case to one of fair comfort and functioning

MORRIS J. SEIDE, M.D., *Hartford, Connecticut*

This paper reviews the reversible factors which are commonly encountered.

The term "uremia" means substances present in the blood which belong in urine. The elevated nonprotein nitrogen (NPN), in itself, is not harmful but is an index of kidney function.

With kidneys normal by clinical and laboratory criteria, the NPN may be increased if the quantity of urea offered for excretion is too great, the fluid available for excretion too small, or circulation to the kidneys inadequate. Return to normal may be made when the error is corrected.

In chronic renal disease, parenchyma may be progressively destroyed, and no symptoms appear until the renal reserve is exhausted. Failure then appears and rapidly progresses, although the rate of destruction be slowed. A few nephrons restored may mean the diffierence between life and death. Close attention to minute details may change an apparently terminal case to one of fair comfort and functioning.

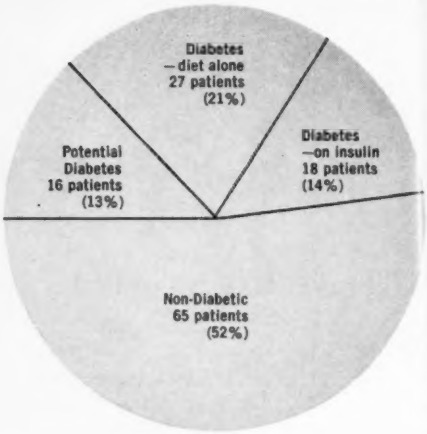
REVERSIBLE CAUSES OF RENAL INSUFFICIENCY

Congestive heart failure furthers the insufficiency by reducing circulation to the kidneys. Even in otherwise normal kidneys, heart failure alone may lead to an NPN of as much as 90 mg.%, albuminuria,

AN AMES CLINIQUICK

CLINICAL BRIEFS FOR MODERN PRACTICE

DIABETES FOLLOWING TRANSIENT GLYCOSURIA*



should a non-diabetic, transient glycosuria ever be considered unimportant?

Never. A patient showing even a mild transient glycosuria should be observed for years as a diabetic suspect.*

Ultimate diagnosis on 126 patients with a previous transient mild glycosuria. Twenty diabetics were discovered 5-10 years after a recorded glycosuria—10 diabetics after more than 10 years.*

*Murphy, R.: Connecticut M. J. *21*:306, 1957.

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cylindruria, and hematuria. Therapy should include digitalis, bed rest and perhaps oxygen. Mercurial diuretics must be used carefully. Salt restriction may help, but must be closely supervised because these damaged kidneys are inefficient in conserving salt.

Pyelonephritis It is not generally appreciated that active infection may be present for years without fever, chills, leucocytosis, dysuria or costovertebral-angle tenderness. Pyuria may or may not develop and bacilluria may be intermittent.

Every patient with chronic renal disease should have a culture of fresh, clean, voided urine. Gram stains of fresh urine are often helpful. Catheters and urologic manipulation only as absolutely necessary. Prophylactic antibiotics may merely change the organism to one resistant to the antibiotic.

Subacute bacterial endocarditis (SBE) may present as renal failure because of mycotic emboli, as well as diffuse glomerulonephritis. The nephritis may be completely reversed if the endocarditis is cured. SBE should be considered more frequently in the differential diagnosis of kidney failure.

Systemic infections, starvation, fever, injury, hyperthyroidism, and most trauma in the presence of borderline renal compensation must be adequately dealt with to forestall further decompensation.

Dehydration may institute a cycle of nausea and vomiting leading to further dehydration, and so on. Encouraging fluid intake may prevent this sequence. Fluids should never be withheld for overnight concentration tests or any other laboratory determination. Early morning nausea, so common in patients with decompensated renal function, may yield to tea, milk, crackers, or cookies—taken immediately on wakening.

Electrolyte abnormalities. Hyponatremia, prone to develop because the damaged tubule cells do not reabsorb sodium efficiently, may cause circulatory collapse and an NPN of 50 to 100 mg.%, even if the kidneys are normal. Prevent by salt added at table, or salt tablets with meals; to correct, intravenous hypertonic sodium chloride may be necessary.

Alkalosis occurs after large amounts of sodium bicarbonate taken by patients with peptic ulcers, especially those with gastric retention and vomiting. Renal function slowly returns to normal if the alkali is stopped.

Potassium depletion alone may lead to renal lesions, dehydration and alkalosis. The urine remains acid, and the specific gravity usually becomes fixed.

Ammonium chloride and/or Diamox, especially in patients with impaired kidney function, may lead to *acidosis,* azotemia and even coma. The diagnosis will usually be missed unless specific inquiry is made.

Hypercalcemia deposits calcium in cells of the collecting and distal tubules and interstitial tissue. Vitamin D poisoning, now less frequent, since it is in disrepute as treatment of rheumatoid arthritis, may be corrected by stopping the vitamin D and decreasing the intake of calcium. Dramatic results have been reported in sarcoidosis following treatment with steroids, completely reverting abnormal kidney function to normal in several cases. The milk-alkali treatment of ulcer not infrequently leads to im-

paired kidney function.

Gout kidney damage is due to urate deposits. Signs of renal decompensation may precede the joint abnormalities. Probenecid has been reported to reverse both the renal insufficiency and the joint abnormalities.

Anemia is a frequent complication of uremia. Hemolysis and bone marrow depression both contribute. Attempts at correction are usually fruitless.

Obstruction of urinary outflow is a common cause of renal insufficiency which may be reversible if the obstruction is relieved. Every elderly man should be given the opportunity to stand at the bedside to initiate micturition. Catheters should be avoided if possible.

Acute glomerulonephritis and *acute renal failure* (acute tubular necrosis, lower nephron nephrosis) are self-limited causes of renal insufficiency. Given the necessary time for recovery, the kidney damage will resolve in most cases. In hospital practice, acute renal failure usually follows shock during surgery, transfusion reactions, severe dehydration or severe electrolyte abnormalities. In most cases the precipitating incident should have been avoided.

ILLUSTRATIVE CASE

A patient shows little or no urine for several hours after a complication which might have produced acute renal failure. If the patient is dehydrated, in shock, has hyponatremia or hypokalemia, correcting these factors may correct all. If no abnormality is evident, 1,000 cc. of 10% glucose in water probably should be given intravenously, over a one hour period. If urine excretion is still not adequate, stop and begin therapy for acute renal failure.

No food or fluids orally. Intake should be by indwelling polyethylene catheter in a superficial arm or leg vein and advanced until the tip lies well within the inferior or superior vena cava—a slow, continuous drip of 50% glucose, totalling 400 to 500 cc. in 24 hours, plus the amount excreted in feces and urine. The patient should be weighed daily and weight should decrease by 200 to 400 gm., about one-fourth pound daily.

BLADDER CATHETERIZATION ONLY FOR GOOD CAUSE

An indwelling bladder catheter is rarely necessary, since bladder capacity is usually limited to 300 cc., at which time discomfort is manifest. Daily percussion and palpation of the pelvis and examination of bed-clothes for incontinence will usually indicate beginning diuresis. At this time, accurate account of excretion is mandatory.

Antibiotics

Only if necessary, and then with caution, since most are excreted through the kidneys. If excretion is prevented during oliguria, serum concentrations may reach dangerous levels.

The NPN may continue to rise even after diuresis has begun, but this should be no cause for alarm. The danger lies in potassium toxicity. Once the serum potassium is elevated, serial electrocardiograms are the most reliable guide to increasing toxicity. Intravenous hypertonic glucose with insulin may temporarily reverse acute potassium intoxication.

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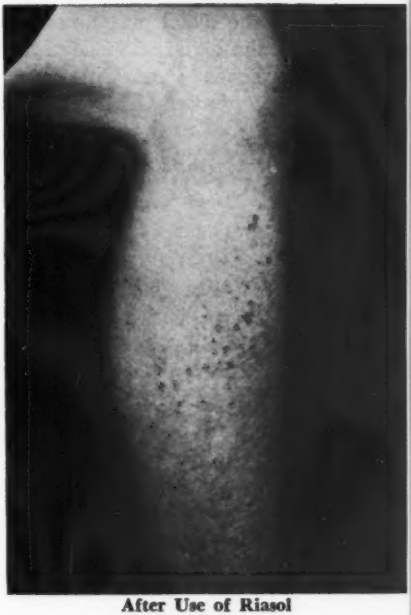

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RIASOL FOR PSORIASIS

ARTIFICIAL KIDNEY

If in the early phases of oliguria, serum potassium is elevated, make use of an artificial kidney because fatal levels may be reached before diuresis occurs. Most patients can be safely carried through oliguria without an artificial kidney.

Avoid overhydration since it may cause congestive failure. Fear of overhydration must not deter the physician from adequate therapy of dehydration.

Congestive heart failure may occur without evidence of overdilution or electrolyte abnormality. Digitalis should always be tried.

During recovery urine volume increases, without any sudden or profound change in tubular structure. Blood flows to glomeruli, thus filtration improves before tubular function improves. Only a few nephrons and relatively little filtrate are required to produce a large urine volume with the specific gravity and constituents of plasma. As tubule function returns, the urine again can be concentrated and urine volume decreases. During the diuretic phase, adequate fluid and electrolyte replacement are mandatory.

Connecticut M.J., 21:970-975,1957.

The Familial Occurrence of Pulmonary Alveolar Microlithiasis

The etiology is unknown. The absence of the usual precipitating factors and the high incidence of familial occurrence strongly suggest a hereditary factor. Thirteen of 23 cases occurred in five families.

The disease usually is asymptomatic for years. It is most often discovered by routine chest roentgenography. The x-ray appearance is pathognomonic.

Sosman, M. C., et al., *Am. J. Roentgenol.*, 77:947-1012,1957.

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Current Concepts in Therapy: Sedative-Hypnotic Drugs. II. Chloral Hydrate. New England J. Med. 255:706 (Oct. 11) 1956.

adults: 1 or 2 7½ gr. capsules or 1 or 2 teaspoonfuls of Noctec Solution 15 to 30 minutes before bedtime.

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Diagnosis and Treatment of Infectious Mononucleosis

Manifestations and diagnostic differential criteria that will help to distinguish the many insidious types of this communicable disease

ALBERT G. BOWER, M.D., *Pasadena, California*

This protean disease may start with a sudden chill, followed by a series of chills, fever and severe prostration, and few physical findings, or it may start insidiously with low-grade fever, mild rhinitis, insomnia with mild night sweats, gastrointestinal upset, and two or three weeks of losing weight and strength. Again, it starts with headache, malaise, sore throat, while in a few cases, swollen glands are the only complaint.

The disease is ordinarily one of low virulence and the cause is unknown. Commonly, it occurs as single, sporadic, isolated cases; but it may be epidemic in schools and other institutions. Usual manifestations are cervical lymphadenopathy, fever, characteristic changes in the lymphocytes without anemia and splenomegaly.

The various types seen are: the glandular, the anginose, the typhoidal or systemic, the hepatic with jaundice, and the central nervous system (CNS) types, involving the meninges, the encephalon, or both. Latent subclinical cases are common with no clinical evidence of the disease and occurring during minor outbreaks or local epidemics. They are detected by serological and morphological blood examination.

GLANDULAR

The lymph glands enlarge early, especially along the sternocleidomastoid muscle at the angle of the jaw, often mistaken for mumps. The glands are tender or painful to pressure. To a lesser extent, other glands enlarge and are tender, as the axillary and inguinal. In 80% the spleen is palpable, in some so friable as to rupture on palpation. In any type, pneumonia may occur as a complication.

ANGINOSE TYPE

This type often starts as an acute sore throat with membrane. Vincent's angina, streptococcal sore throat, or confluent tonsillitis due to other organisms may be simulated. All cases require laboratory investigation. Blood platelets may virtually disappear. Intractable hemorrhage may result from sloughing of throat tissues. Fever may go to 105°F., falling by crisis; in other cases by lysis, taking several weeks to return to normal if untreated.

SYSTEMIC TYPE

This type simulates typhoid fever or brucellosis, often is difficult to differentiate from other infectious fevers in which the spleen is enlarged. It also simulates murine typhus, Q fever, and miliary tuberculosis. In 80% the spleen enlarges and palpation must be very gentle as there is risk of rupture.

In all our cases of all types of infectious mononucleosis, the liver showed impaired function. A damaged liver must, therefore, be considered a part of each and every case of the disease, varying in any particular case only in degree and severity. The diagnostic Downey cells are not present in hepatitis other than that due to infectious mononucleosis.

CENTRAL NERVOUS SYSTEM TYPES

Cases of this type are hard to differentiate from acute poliomyelitis cases during polio epidemics, and from the sporadic arthropod-borne or non-suppurative encephalitis. They usually clear without sequelae, though a few deaths have occurred. Recently such a case was saved by using gamma globulin, tracheotomy, and the iron lung.

SKIN AND MUCOUS MEMBRANE

Occasionally a few pinhead-size macules appear which change from a bright red to a darker color within 36 to 48 hours. Other rashes look like German measles, or rose-spots of typhoid fever may come on after a week of illness. Purpura has occurred, also urticarial lesions.

HEMATOLOGICAL ASPECTS

The blood picture is almost characteristic. It is alleged that the diagnostic Downey cell also occurs in infectious hepatitis, Q fever, typhoid fever, and a few other morbid conditions.

The presence of typical Downey cells in the peripheral blood of a sick person means that the illness is infectious mononucleosis. We have known of cases misdiagnosed and treated as leukemia, in which a carefully stained and studied smear would have established the diagnosis as infectious mononucleosis quickly and easily. The total white blood count is neither consistent nor typical. Aside from the presence of the atypical lymphocyte, with typical, foamy cellular structure, with the

bubbly vaculoization so characteristic in a Downey cell, the striking fact is the absence of anemia, and the white count from day to day varying *from 3,000 to 50,000*. A leukopenia is common early in the disease, with a relative lymphocytosis. Downey cells are atypical lymphocytes and are usually present in 7 to 10 days after onset.

GROSS PATHOLOGICAL CHANGES

These are limited largely to lymphoid structures, especially the spleen. Hyperplasia of nasopharyngeal lymphoid structures is consistent; the liver enlarges, and lymph glands show diffuse hyperplasia and fibrosis. Perivascular round-cell cuffing occurs in virtually all the organs. The granulocytic components of the marrow are normal or increased, the erythropoietic structures unchanged. Scaffolding structures of lymph glands, liver and spleen undergo destruction.

PROGNOSIS

The vast majority of cases are mild and transitory and, like cases of abortive polio, are not seen by a physician. Other cases are followed by prolonged periods of prostration, and still others assume a chronic, undulant, relapsing form, going on for months or years, and diagnosed everything except what they are. Many slides may have to be examined to find a very few typical Downey cells in these chronic cases, and the Davidsohn test is positive in low titer only. In contrast to the high titers in the acute cases, it is rarely over 1:64.

It remains unknown how the disease is transmitted. Hoagland believes that it is spread by kissing. It practically never occurs as a cross infection in open hospital wards, or in roommates.

THERAPY

Various anti-infective drugs have been tried and found wanting. After the acute phase is over, disability hangs on, sometimes for months. Ketosteroids of the adrenal series are of value in small doses.

For the acute disease, the use of gamma globulin (even that now sold with the erroneous label: "poliomyelitis immune globulin,") is specific. It must be given in sufficiently large or repeated doses to achieve the result desired. The right dose is the one that cures the patient. This averages 10 to 20 cc.; in very severe cases I have given 200 cc. with dramatic response. In chronic cases it is palliative, but not curative.

Arizona Med., 14:581,1957.

The Doctor Builds His Estate

Prepared for the readers of Clinical Medicine by the Research Department of the leading investment banking and brokerage firm of Bache & Co., 36 Wall Street, New York 5, New York

These monthly articles point out one method by which the professional man may overcome the particular handicap imposed upon him by our tax structure, which taxes the bulk of his income at normal income tax rates, as opposed to the capital gains tax avenue open to many business men. One solution to this problem is the systematic investment of a portion of current income each year in securities. Such a program, which should include many different types of investments such as bonds, preferred stock, common shares and shares of mutual funds, will have as its objectives growth of principal together with reasonable income. We again emphasize that even the most complete series of articles of this type cannot take the place of consultation with a representative of a reputable brokerage firm.

There are few things as certain in business—or in anything else, for that matter—as change. New companies, new products, new personnel, new methods, all are part and parcel of the industrial scene in the United States.

These changes affect every level of the American economy. Everyone has noticed, for example, new stores constantly opening in town, old ones moving, expanding, putting in new lines of merchandise, hiring more people, etc. At the end of World War II there were 3,113,000 business firms, large and small, in operation in this country. In every year since then, between 300,000 and 400,000 new firms have been es-

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AND
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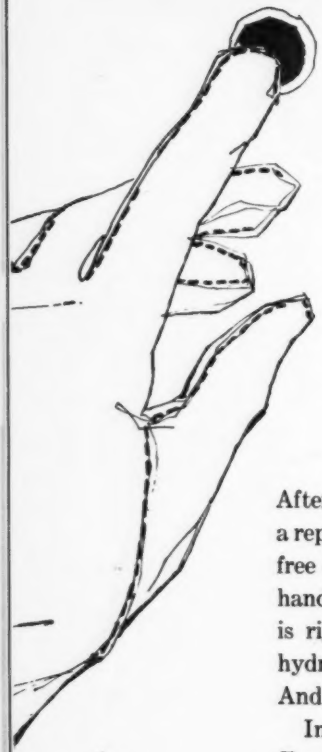

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tablished. In each of those years, 175,000 to 325,000 firms have been discontinued for various reasons. Another 300,000 to 500,000 businesses have been transferred—have undergone changes in ownership or in legal form of organization. After this immense turnover, the country has been left with more than 4,300,000 firms in operation. For example, there are now a half a million more retail stores in operation than at the end of World War II, even though an average of 100,000 a year have been discontinued.

These shifts are made not only by neighborhood stores but by the giants of American industry as well. The last decade has seen the merging of the Bank of Manhattan and the Chase National Bank; the merging of Studebaker and Packard; the formation of American Motors by Nash-Kelvinator and Hudson Motor Co.; the proposed merger of Bethlehem Steel and Youngstown Sheet & Tube; the possible merger of the New York Central R.R. and Pennsylvania R.R.; the proposed union of the Great Northern Railway and the Northern Pacific. The forthcoming break-up of the Transamerica holding company, the diversification of Pullman, Inc. from a builder of railroad cars to a diversified industrial enterprise, the vast shift of American Woolen, Robbins Mills and Textron from three textile firms into one surviving firm with holdings in many different industries, the growth of the synthetic fiber producers, the birth of the synthetic rubber, atomic energy, television and other industries—all are examples of the vast changes constantly being wrought in our competitive economy.

This month, we are discussing the securities of three companies which have been subject to these pressures for change to a great degree in the past decade. Cities Service, once a large public utility holding company, was forced to divest itself of these holdings by the Public Utility Holding Company Act of 1935, finished this divestiture in 1954, and is today an integrated oil and natural gas system operating in every phase of the petroleum industry. United Artists Corp., formed as far back as 1919 by Mary Pickford, Douglas Fairbanks, Charles Chaplin and D. W. Griffith, which had operated for more than 30 years as a marketer of films for a distribution fee, has, under new management in the last six years, transformed itself into a firm financing the majority of the films it distributes, vastly increasing its earning power. Air Reduction Co., the third company we are discussing this month, has added an important position in the chemical industry to its traditional line of industrial gasses and related equipment.

UNITED ARTISTS CORPORATION

United Artists differs from virtually all other major motion picture distributors in that it owns no studios and produces no pictures, giving it an advantage over the rest of the industry in that it incurs no heavy overhead charges and has its cash free to finance movies. The company finances films made by independent artists, often a producer, director and star who join together in corporate form to make one or more pictures. In addition to the creative latitude thus enjoyed, artists receive various tax benefits from this type of operation.

The status of the company has

changed in two very basic ways in the past decade. For one thing, it has just become publicly owned—350,000 shares of common stock having been sold to the public in April of 1957. For another thing, it has changed its basic function from solely distributing movies to both financing and distributing. Distributing means the performance of all the functions involved in "releasisng" a picture, including booking the film into theaters, promoting and exploiting it as well as physically distributing the prints. For such services, the company takes a flat fee, generally 30% of the gross. Financing involves procuring for independent producers all of the cash required for production, generally from banks on the basis of loans direct to the producer secured by a lien on the picture and guaranteed by United Artists, which retains a participation in the film's profits.

The company was formed in 1919 by a group headed by several film industry leaders to function as a sales organization for the marketing of films they intended to produce individually. For three decades, the company rendered a marketing service for a distribution fee, and did not share in the profits of most of the films it distributed. Although it distributed many quality films produced by its founders and such other producers as Samuel Goldwyn, David O. Selznick and Sir Alexander Korda, the company never produced a picture on its own.

After World War II, with most of its founders no longer connected with the company, its fortunes declined, as many independent producers discontinued operations and the company operated at a deficit in 1948, 1949 and 1950. Early in 1951, a new management team took over, and through a program of securing working capital and a line of credit to be made available to independent producers to finance new movies, was able to turn the company around by the end of that year, ending 1951 with a $313,000 profit even though a substantial loss had been incurred in the first half.

After that, through the purchase of Eagle Lion Classics, Inc., which provided distribution rights in a number of pictures which increased gross revenues until new films could be produced and made ready for release by the company, United Artists was able to obtain by 1953 a much broader financing program from an increased number of banking institutions, and thus to attract more important stars, producers, directors and writers for independent productions. Since then, the company has operated not only as a distributor but also as an important supplier of financing for independent producers. Last year, for example, the company procured financing for more than 90% of its releases. Thus, of 32 pictures released in 1952, only 7 were financed by the company, but this ratio rose to 20 of 48 in 1953, 27 of 48 in 1954, 27 of 38 in 1955 and 39 of 47 in 1956.

During the past six years, the company has released such films as "The African Queen," "High Noon," "Moulin Rouge," "The Barefoot Contessa," "Marty," "Not As A Stranger," "Trapeze," "The Kentuckian," "The Pride and the Passion," "Sweet Smell of Success," "Bachelor Party" and "Around the World in 80 Days."

Gross revenues have risen steadily under the new program. In 1951, total revenues amounted to little more than $20 million. By 1956, in con-

trast, this had risen to almost $65 million, and for 1957 probably topped $70 million. For the first nine months of 1957, gross world-wide film income rose to $52.5 million from $46.8 million in the same period of 1956.

Profits have also moved higher. From the scant $313,000 netted in 1951, first year under the new management and the equivalent of about 30¢ a share on present capitalization, earnings climbed to $414,000 in 1952, $621,000 in 1953 (before a special credit from the sale of an affiliate), $883,000 in 1954, $2,682,000 in 1955 and $3,106,000 in 1956, or $2.90 a share on present capitalization. In the first nine months of 1957, United Artists netted $2,363,000 or $2.21 a share, compared to $2.10 a share in the same period of 1956. For the full year, earnings are believed to have topped last year's level by a small margin.

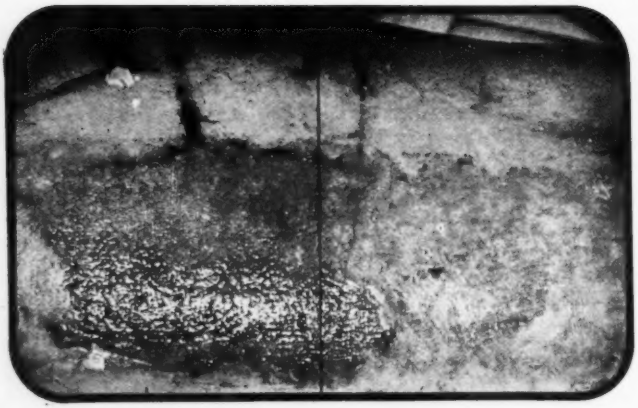
United is not resting on its laurels. For 1958, the company plans to release at least 36 feature films for theaters, down from the 50 or so released in 1957 but with more costly films included, with a bigger box office potential. It hopes to release four "big" motion pictures in each quarter of 1958, compared to five "big" films in all of 1957. By 1959, United hopes to boost revenues to $100 million.

United's aggressive management is diversifying into television operations, well aware of the threat that medium has become to the motion picture industry as we have known it. The company since 1951 has insisted wherever possible upon a grant of TV rights in its distribution agreements, and has thus acquired such rights for more than 200 films. In addition, the company late in 1956 created a department for the direct distribution of films to television stations, networks, advertising agencies and sponsors, and created a program of 39 films released to theaters in 1948-54 and has undertaken to license them on a syndicated basis for TV showings throughout the U. S. Contracts for more than $2 million in gross license fees were signed during 1956, and for perhaps another $5 million in 1957.

What's more, the company has completed plans for a television film division to operate basically as the movie division operates—financing and distributing but not producing. The company expects to offer a minimum of three TV program series next year.

United has also formed two other subsidiaries in its efforts to cover more of the entertainment industry, as well as to exploit the music from its movies, United Artists Records Corp. and United Artists Music Corp., to put the company into the phonograph record and sheet music business. A number of hit songs came out of UA pictures in recent years, including "High Noon" and "Moulin Rouge," but the company says it netted little from the songs in proportion to what they earned because it had to farm out both the recordings and the sheet music. The company believes this will offer a chance to coordinate promotion to benefit the songs and movies alike, and offers singers a chance to participate in earnings.

The public incidentally, owns only the 350,000 shares of common stock outstanding, with the 650,000 shares of Class B common owned entirely by the management. Both classes have voting rights. The Class B common is convertible into common



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was obtained in a quantitative study of 50 donor sites, each dressed half with FURACIN gauze, half with petrolatum gauze. Use of antibacterial FURACIN Soluble Dressing, with its water-soluble base, resulted in more rapid and complete epithelialization. No tissue maceration occurred in FURACIN-treated areas. There was no sensitization.

Jeffords, J. V., and Hagerty, R. F.: Ann. Surg. *145*:169, 1957

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the broad-range bactericide that is *gentle to tissues*

spread FURACIN Soluble Dressing: FURACIN 0.2% in water-soluble ointment-like base of polyethylene glycols.

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spray FURACIN Solution: FURACIN 0.2% in liquid vehicle of polyethylene glycols 65%, wetting agent 0.3% and water.

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UNITED ARTISTS CORPORATION

Price	15¼
Dividend	$1.40
Yield	9.2%
1957 Price Range	25⅜-15
Traded	N.Y.S.E.

Capitalization (9/28/57)

Notes Payable	$4,175,000
*6% Conv. Deb.	$8,503,100
Common Stock	421,255 shs.
Class B Common Stock	650,000 shs.

*Convertible into 404,909 shares of common stock.

stock share for share, but now receives no dividends.

For those interested in a commitment in a situation which, although speculative, offers a generous yield, extremely competent management and a chance for capital appreciation over the years ahead, the shares of United Artists Corp. may be recommended. For those investors interested in a more senior position in the company, the convertible debentures should be considered.

CITIES SERVICE COMPANY

The Public Utility Holding Company Act of 1935 sounded the death knell of Cities Service as a manufactured gas, electric light and power, natural gas and petroleum company. As the result of the Holding Company Act, Cities Service, between 1943 and 1954, divested itself of its utility holdings and remained a completely integrated oil company, directing its energies to the exploration for and production of crude oil, the refining and marketing of petroleum and its many products including petro-chemicals and the transportation of petroleum. Cities Service markets a complete line of petroleum products from aviation gasoline to heavy fuel oils in some 38 states east of the Rockies and in Eastern Canada. This territory includes about 84% of the population of the United States and Canada.

That the necessary change in operations was painful is obvious from the fact that as late as 1947 electrical functions accounted for $49.6 million in gross operating income out of the total of $433.6 million and in 1949 this relationship was still $24 million out of $496.4 million. Despite this difficult transition gross income for Cities Service has grown from $433.6 million in 1947 to $767.2 million in 1956. Net income has risen from $43.1 to $65.8 million in these same years and cash dividends paid to common stockholders from $5.6 to $24.3 million.

This increase in earnings reflects growth in the company's operations. In 1947 Cities produced 33.3 million bbls. of crude oil and in 1956 44.3 million bbls. These same years saw natural gas production rise from 153.6 million MCF to 298.6 million MCF and crude oil processed in the company's refineries for its own account from 56.1 million to 94.5 million bbls.

The earnings increases are not only the result of growing operations but also of upgrading these operations. Cities Service has vastly improved its many service stations and has also emphasized increasing sales of branded products, the profit margins of which are higher. Marketing expansion has been geared to concentrating in areas which would take best advantage of

Cities Service Company	
Price	49
Dividend	$2.40
Yield	4.9%
1957 Price Range	71-47⅜
Traded	N.Y.S.E.

Capitalization (12/31/56)
*Long-term debt $72,033,900
Common stock .....10,312,553 shares
(Including stock dividend of 202,206 shares distributed Jan. 24, 1957)
*Plus $387,341,203 obligations of subsidiaries consolidated.

the company's supply points. In 1956, Cities introduced a third grade of gasoline. The company's production of residual fuel, the least valuable of refined products, is equal to about 4% of its total production, compared with an industry average of about 14%.

All this growth and increased efficiency is, of course, a reflection of the company's large capital expenditures. In 1956, Cities spent $117.0 million for capital increases. In the ten-year period, 1947-1956, capital expenditures averaged $108.3 million a year.

Much of this money has been spent on finding new sources of crude oil. In 1956, $62 million went to the search, out of the aforementioned total of $117 million. This $62 million compares with $23.7 million in 1947. The large expenditures were —and remain—necessary since as refining capacity grows, profit margins decline unless crude oil production maintains at least the same pace of growth.

Of course, the search for crude oil is risky since it takes a combination of good luck and superior skills to find the oil hidden deep below the earth's crust. That Cities has this unique combination is indicated by the growth in oil production quoted above: 33.3 million bbls in 1946 to 44.3 million in 1956.

The exploration for crude oil continues. Cities is a dominant landholder in the off-shore Louisiana area where, at the end of 1956, it controlled 25% of a group which controls a total of some 400,000 acres. The exploration in this area has found large amounts of oil which should prove a significant new source of production. This area is also a large, new profitable source of natural gas production. In Venezuela, Cities is now exploring in the Gulf of Paria, an area which geologically is most promising. The company's properties in Colombia also seem well-placed for discovery possibilities. In Dhofar on the Arabian Peninsular, Cities has uncovered a very large oil-bearing geological structure indicated to be 5 miles wide and 11 miles long. Wells on this structure could produce 2000 bbls. per day (a good well in the U.S. can produce about 500 bbls. per day). Other structures appear to be present on the 32,000 square mile concession which Cities shares with Richfield Oil (Cities also owns 31% of the stock of Richfield). Production tests and geological information point to Dhofar as a future major oil project.

This year has been a disappointing one for Cities with earnings declining from $2.27 per share in the first quarter to $.91 in the third quarter. This decline reflects the industry-wide abnormally high level of activities in the first quarter resulting from the Suez crisis. However, the

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The local and systemic effects of BEN-GAY were evaluated by entirely objective methods in 211 subjects of both sexes suffering from various types of chronic arthritis, bursitis, neuralgia, myalgia and lumbago. Changes in range of joint motion were determined by goniometer and by flexion. Topical application of BEN-GAY measurably improved articular function in 94% when physical therapy was also used, and in 61% without adjunctive treatment. Efficient absorption of salicylate through the skin was indicated by an average urinary excretion of 15 mg. in 24 hours. No ill effects were reported or observed.

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[1]Brusch, C.A., et al.: Md. State Med. J.; 5:36, 1956.

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Ultramicro Methods for Clinical Laboratories

by Edwin M. Knights, Jr., M.D., Director of Clinical Pathology and Blood Bank; Roderick P. MacDonald, Ph.D., Director of Clinical Chemistry and Research Advisor; and Juan Ploompuu, Chief, Division of Ultramicro Chemistry and Research Associate, all of Harper Hospital, Detroit, Mich. Grune and Stratton, New York, 1957.

Rapid ultramicro methods of gr accuracy have been developed use in a large number of cases which it is essential that accur determination be made from v small quantities of blood and ot body fluids. This booklet descri the setting-up of facilities for use of this method in the gene laboratory. It gives the techni the several determinations in gr detail.

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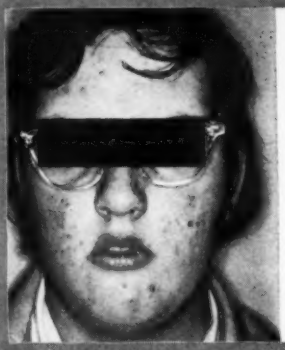

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Signs and Symptoms: Applied Pathologic Physiology and Clinical Interpretation

edited by Cyril Mitchell MacBryde, A.B., M.D., F.A.C.P. Third edition, with 191 illustrations and six color plates. J. B. Lippincott Company, Philadelphia & Montreal. 1957. $12.00

This book approaches diagnosis in the way that a good doctor does. In each chapter a major symptom or sign is discussed as to means of production and its correlation with other symptoms and physical and laboratory findings. The analysis and interpretation of symptoms, the present illness, the association of symptoms and the importance of good history taking—all these are well covered. The chapter on pain is one which will prove rewarding. Each chapter concludes with a concise summary of its content.

Management of the Patient with Headache

by Perry S. MacNeal, M.D., F.A.C.P., Jefferson Medical College; Bernard J. Alpers, M.D., Sc.D. (Med.), F.A.C.P., Jefferson Medical College; and William R. O'Brien, M.D., F.A.P.A., Jefferson Medical College. Lea & Febiger, Philadelphia. 1957. $3.50

The fact that the author does open his book with a statement headache is the commonest c plaint known to mankind prepos in favor of his book. Going a through the book, one finds that prepossession was well deserved is a balanced work, which ass the various causative factors each appropriate amount of discredit, chooses for the reader its most propriate management.

The Doctor As A Witness

by John Evarts Eracy, Profe of Law (Emeritus), University Michigan. W. B. Saunders Comp Philadelphia & London. 1957. $

Once in a while, every doctor is apt to be called upon to appea a witness in a court trial sh bring up-to-date his knowledg what may be required of hin such a circumstance. Having d this, all he has to do is to carry these few instructions. In advan court appearance, approximate n ing that can be weighed or m sured. If a question is not un stood, insist that it be repeated til it is understood. Differentiate curately between what you k and what you think. If you do know, say you do not know, stick to it.

problems of management. In these cases, diabetes became manifest especially in the second or third trimester, disappeared partly or completely following delivery and recurred with subsequent pregnancies. Finally diabetes became permanent. The first case of this series showing a fasting blood sugar of 700 and, a few weeks postpartum, a normal glucose tolerance curve.

Lactosuria is usually limited to the period of lactation or the last two weeks of pregnancy. Excretion of true glucose with normal blood sugar levels is caused by impaired reabsorption of sugar by the renal tubules. A tolerance test may be necessary to bring out the first evidence of diabetes. A post-prandial blood sugar test during the seco and third trimester of pregnan might bring to light a number of u recognized cases of diabetes. H tory of diabetes in the famil / m make us suspicious and lead to t proper diagnosis.

Hoet has emphasized that in so cases diabetes may be detected d *ing pregnancy* many years bef there is any evidence in the n pregnant state. Repeated pregnan may hasten the development of p manent diabetes. The importance early detection of diabetic tend cies in all cases of pregnancy stressed. The high fetal morbid and mortality makes active tre ment of the prediabetic mother i perative.

Levison, W., *J. M. Soc. New Jersey*, 54:229-234

AGE . . . In older people, chronic constipation and biliary dyspepsia are often the result of decreased food and water intake, inactivity, intestinal muscle atonicity, increased anorectal disorders, biliary stasis.

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Rubella in Pregnancy

Rubella was considered a benign infectious disease of childhood until 1941 when the epic work of Gregg disclosed the high incidence of congenital cataracts in the eyes of infants delivered of mothers who had contracted rubella during the Australian epidemic of 1941. This was later amplified by others and gradually a series of defects including deafness, congenital cataract, congenital heart disease, central nervous system damage and dental malformations were related to the disease. The mild course of rubella is seldom altered by pregnancy, and the concern is not for the mother, but regarding possible damage to the fetus.

As information accumulates, it would seem there is little risk when the mother develops rubella beyond the 16th week of gestation. Prior to that time, we can estimate an incidence of 5 to 7% fetal anomalies and 6 to 10% stillbirths, on the basis of the larger studies presently available.

What should be the program when rubella exposure occurs during the first 16 weeks? At present, pooled gamma globulin or convalescent serum is being administered, but its effectiveness is open to question. Four separate studies indicate that neither convalescent serum nor ordinary gamma globulin has been consiste ly effective in prevention. And course of rubella may be modified a subclinical form; anomalies dev op from this type of infection wh the patient and her physician m be falsely reassured that the dise did not occur.

If rubella develops in these fi 16 weeks, should therapeutic ab tion be performed? Certain religi bodies forbid it. Under the laws some states pregnancy can be terrupted only to preserve the of the mother. Certainly the a parity and ease of conception of patient must be taken into acco With these facts at hand, each phy cian must decide whether a 5 to increased incidence of fetal anom or the risk of stillbirth sho prompt consideration of interrupt of pregnancy in a mother less t 16 weeks pregnant.

Pearse, W. H., *J. Michigan M. Soc.*, 56:340-363

Latent Diabetes Becoming Manifest During Pregnancy

Pregnancy is known to aggra diabetes mellitus. Some believe t pregnancy may *cause* diabe More likely, pregnancy helps ma fest an otherwise latent diab state. Six cases are presented wh show that it is often possible to cognize the pre-diabetic state dur pregnancy; and reflect some of

decline also reflects the industry-wide low level of activities which developed during the year due to high inventories, and disappointing growth in demand. The low petroleum product prices and tanker rates were also important factors in the earnings decline.

The prospects for increasing earnings significantly in the fourth quarter or early in 1958 seem unlikely. We look for full-year 1957 earnings to be between $5.50 and $6.00, compared to $6.03 in 1956. However, the longer-term outlook remains bright, with the future demand for oil and Cities Service's ability to take full advantage of this demand growing. The stock of Cities could see some further weakness, but the long-term investor may well consider accumulating this security looking forward to much better times.

AIR REDUCTION COMPANY

In 1951, the Air Reduction Company, then primarily associated with the production of industrial gases and related equipment used for cutting and welding of metals, formed the Air Reduction Chemical Company and began deeper penetration of the rapidly growing chemical industry. The basis for the company's growing stake in chemicals is acetylene, once used mainly in welding, but now regarded as a highly versatile chemical building block. A huge calcium carbide and acetylene generating plant was constructed at Calvert City, Kentucky, representing 50% of total U.S. acetylene production.

Since 1951, the company has sold growing amounts of acetylene, largely by pipeline, to such companies as B. F. Goodrich and General Aniline and Film and to its own plants, for further upgrading into such products as vinyl chloride (for upholstery, insulation, hoses, floor coverings) and acrylonitrile (acrylic fibers, nitrite rubber and plastics). Other products using acetylene as a starting material are Neoprene (for insulation, industrial belting), pharmaceuticals, stabilizers, polyvinyl acetate emulsions (for water-based paints) and many others. In addition, there is now in development an acetylenic based high energy fuel for rockets and missiles.

By 1956, Air Reduction's $169.8 million sales were divided as follows: acetylene for chemical uses and other chemicals, 20.5%; industrial gases and welding and cutting equipment, 56%; carbon dioxide, 9%; medical gases and equipment, 7%; export sales and foreign subsidiaries, 7.5%. Among the company's largest consumers are the chemical industry, 24% of sales; medical, 8%; steel mills, 6%; electrical equipment and electronics, 5%; structural metal fabricators, 5%; machinery and appliances, 5%; various other industries, 47%.

While the chemical activities and sales to the chemical industry represent important elements in the Air Reduction story, the company's other pursuits should not be overlooked. Demand for industrial gases—oxygen, nitrogen, argon, acetylene, helium, xenon, krypton and neon—has generally been firm and in a sound, fundamental growth trend. Argon and helium, for example, are witnessing the opening of new markets as shielding gases in the welding and cutting of new metals such as titanium and zirconium used largely in jet aircraft, guided missiles and nu-

Air Reduction Company			
Price	50¼	Capitalization (12/31/56)	
Dividend	$2.50	Long-term debt	$21,189,908
Yield	5.0%	Conv. Preferred stock ($100 Par)	41,993 shs.
1957 Range	65¾-45⅝	Common stock	3,687,665 shs.
Traded	N.Y.S.E.		

clear reactors. The electronics industry is taking growing quantities of these gases and nitrogen. Oxygen in liquid form is also increasing steadily in usage particularly because of the demands of the rocket and missile makers. Products sold to the important metal-working industries have done well over the years and should continue to show gains as our economy expands.

Since 1948, when the present management assumed control, sales and earnings have expanded from $92.8 million and $2.36 per share respectively to $169.8 million and $4.19 per share in record-breaking 1956. These gains continued into 1957. Sales in the nine months ended September 30, 1957 reached $140.9 million compared with $123.8 million in the like months of 1956. Earnings in this period expanded to $3.28 per share as against $3.21 in the first three quarters of last year. Earnings for all of 1957 should approximate $4.40 per share, a new record.

In the five year period between 1957 and 1961, Air Reduction expects to spend $100 million on capital expansion. This represents more than a 50% increase over the company's gross property account of $175 million at the end of 1956. A major portion of these funds will be channeled into chemical activities although other product lines will not be neglected. Since the company's financial condition is strong, this expansion is likely to be financed through retained earnings, depreciation reserves and long-term debt, thus obviating the need for equity funds which tend to dilute stockholders' future claims on earning power.

Recognizing the excellent growth potential inherent in Air Reduction's chemical activities as well as normal anticipated expansion of industrial and medical gases, we recommend commitments at these levels for longer-term investors seeking both capital growth and reasonable current income.

decisive action in stress

SPARINE is recommended for use in that portion of t
Stress Spectrum requiring the action of a potent, relativ
nontoxic drug to return the patient toward norm
SPARINE has caused no liver damage, no parkinsonia
like syndrome, and but rare instances of blood dyscra

Falvin *(Lederle)*

Complete hematinic that contains Autrinic intrinsic factor to aid the absorption of B_{12} through the gastrointestinal mucosal barrier. This solves the problem that has limited the usefulness of previously available oral hematinics which inhibited B_{12} absorption. *Indications:* Macrocytic and microcytic anemias and for treatment of marginal anemias and the B_{12} deficiency states which may predispose a patient to anemia. *Dosage:* Two capsules daily. Dosage may be adjusted at the physician's discretion. *Supplied:* Bottles of 60 and 500 capsules.

Darbid *(S.K.F.)*

New, long-acting anticholinergic compound providing antisecretory and antispasmodic action with one tablet every twelve hours. *Indications:* Peptic ulcers and other gastrointestinal disturbances in which suppression of gastrointestinal secretion and motility is vital. *Dosage:* One 5 mg. tablet every 12 hours. Some patients with severe symptoms may require two 5 mg. tablets every twelve hours. *Contraindications:* Glaucoma, pyloric obstruction, or prostatic hypertrophy. *Supplied:* Bottles of 50 sugar-coated 5 mg. tablets.

Dipaxin *(Upjohn)*

Oral anticoagulant in a 1 mg. form. Its relatively long period of action favors a steady, controlled prothrombin level. Its anticoagulant action is similar to that of bishydroxycoumarin, though its activity is more potent and prolonged. *Indications:* For the prophylaxis and treatment of intravascular clots, pulmonary embolism, post-operative thrombophlebitis, recurrent idiopathic thrombophlebitis, and acute embolic and thrombotic occlusion of peripheral arteries. *Dosage:* Average maintenance dose is 3 to 5 mg. daily. *Supplied:* Bottles of 100 tablets of 1 mg. each.

Urologic Solution G *(Abbott)*

Urinary tract irrigating solution to dissolve calcified calculi within the urinary tract. It has a pH of 4.0 and contains citric acid, U.S.P. monohydrate; magnesium oxide (anhydrous) and sodium carbonate (anhydrous). Stable at room temperature and needs no refrigeration. *Precautions:* Solution is intended for irrigation only, not for parenteral use. It is a conductive solution and must not be used in the presence of electrical instruments. *Supplied:* 1000 cc. *Abbo-Liter* containers.

Control the major symptoms

In Parkinsonism Parsidol has proved outstandingly effective for controlling tremor and muscular rigidity, the principal impairments in this disease.[1,2]

With Parsidol most patients show rapid, even dramatic improvement—both in major symptoms and in gait, posture, balance and speech. Side effects are minimal. Parsidol is compatible with all other antiparkinsonian drugs and its effectiveness may even be increased in combination or rotation with such preparations as atropine and dextro-amphetamine.[3] Parsidol improves the patient's emotional perspective, promotes a more optimistic outlook as physical coordination and dexterity return.

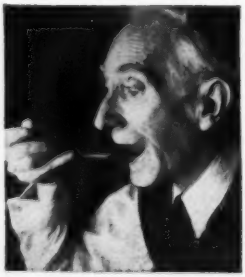
Most patients can be controlled with a maintenance dosage of 50 mg. four times daily. However, more severe cases may require up to 600 mg. daily, a dosage level ordinarily well tolerated.

References: 1. Doshay, L. J.; Constable, K. and Agate, F. J., Jr.: J.A.M.A. *160*:348 (Feb.) 1956. 2. Berris, H.: J.-Lancet *74*:245 (July) 1954. 3. Timberlake, W. H. and Schwab, R. S.: N. Eng. J. Med. *247*:98 (July 17) 1952.

PARSIDOL®

hydrochloride

WARNER-CHILCOTT



Above and right are action pictures, taken from a Warner-Chilcott film study, of a parkinsonian patient before and after initiation of Parsidol therapy for major tremor.

Combid *(S.K.F.)*

Anticholinergic-tranquilizer combination for 24 hour control of both physical and psychic components of ulcer and other gastrointestinal disorders. Each *Spansule* capsule contains 5 mg. of *Darbid* (isopropamide) as the iodide; and 10 mg. of *Compazine* (prochlorperazine) as the dimaleate in sustained release form. *Indications:* Emotional stress or nausea associated with ulcers and other gastrointestinal disturbances. *Dosage:* One capsule every 12 hours. Some patients may require only one capsule every 24 hours, on arising. *Contraindications:* Glaucoma, pyloric obstruction, prostatic hypertrophy, or conditions where nausea and vomiting are believed to be a manifestation of intestinal obstruction. *Supplied:* Bottles of 30 yellow-topped capsules.

Ketostix *(Ames)*

Simplified dip-and-read test for ketonuria that is performed by dipping the strip in urine sample and comparing it to a color chart on the bottle label. The presence of ketones is indicated by a color change on the strip. *Supplied:* Bottles of 90 reagent strips.

Thorazine Multiple Dose Vial *(S.K.F.)*

New package size of *Thorazine Ampul Solution.* Each 10 cc. vial contains chlorpromazine hydrochloride, 250 mg. (25 mg./cc.). These vials are less expensive and afford more efficient usage of the solution than do individual ampuls. *Supplied:* Single vials and in packages of 20.

Panalba Capsules *(Upjohn)*

Panmycin phosphate complex combined with *Albamycin* (as novobiocin sodium). These capsules have a wider range of therapeutic activity and they increase the antibacterial effect in the area of relative weakness of tetracycline drugs. *Indications:* Mixed infections and infections susceptible to therapy with tetracycline, novobiocin, or a combination of the two. *Dosage:* One or two capsules daily, depending on the type and severity of the infection. *Supplied:* Bottles of 16 blue and brown capsules.

Spontin *(Abbott)*

A bactericidal antibiotic that is effective against staphylococci and enterococci, including many strains resistant to other antibiotics. *Indications:* Gram-positive bacterial infections. *Dosage:* Intravenous injection must be used. Best results are obtained by using the drip technique. Required dosage is dissolved in dextrose 5% in water and administered in 35 to 40 minutes. *Precautions:* Frequent white cell counts and periodic urinalyses should be performed during treatment. *Supplied:* Available in limited quantities as a sterile, lyophilized powder in vials representing 500 mg. of Ristocetin A activity.

Sul-Spantab Tablets *(S.K.F.)*

New sustained release dosage form providing the same broad-spectrum sulfonamide found in *Sul-Spantab Liquid* and the same q12h dosage convenience. *Supplied:* Bottles of 50 tablets.

Partal *(Searle)*

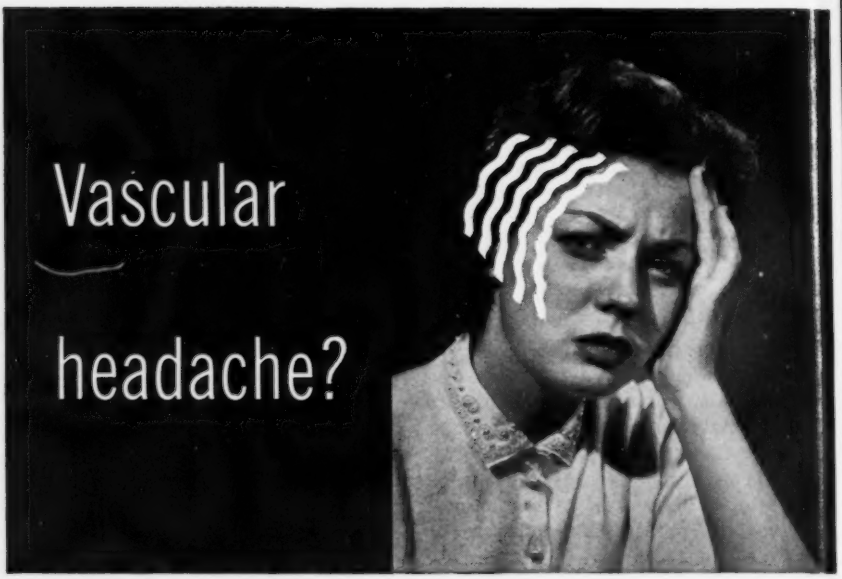
A new, single chemical substance for the control of excessive psychomotor and emotional activity that produces tranquilizing effects without sedation. *Indications:* Agitated and anxiety states associated with insomnia, anorexia, abnormal excitement; and for treatment of the psychosomatic symptoms of organic disorders such as peptic ulcer, cerebral arteriosclerosis, catatonic or paranoid schizophrenia, neuroses, psychoses, alcoholism, etc. *Dosage:* For anxiety-tension states, psychosomatic disorders, and other neuroses, the recommended dosage is 5 mg. three times daily. For psychotic conditions, the recommended dosage is 10 mg. three times daily. Respective dosages should be individually adjusted, according to the needs and response of the patient, in units of 5 or 10 mg. at intervals of three or four days. *Supplied:* 5 mg. or 10 mg. tablets in bottles of 50 and 500 tablets.

Optilets *(Abbott)*

Therapeutic vitamin tablet containing eight essential vitamins with Filmtab coating. For additional nutritional support, *Optilets-M* adds the benefits of nine minerals. Filmtab coating seals in all vitamin tastes and odors and makes the tablets easy to swallow. *Dosage:* One or two tablets daily. *Supplied:* Bottles of 50, 100 and 1000 tablets.

Tryptar Antibiotic Ointment *(Armour)*

Now available in a new size package containing two ounces per tube.



WIGRAINE®

TABLETS AND SUPPOSITORIES

When taken at the first indication of symptoms, Wigraine tablets and suppositories relieve vascular headaches (e.g., *migraine*) completely. The uncoated Wigraine tablet disintegrates quickly, acts promptly. Wigraine suppositories are useful for those patients who experience nausea and vomiting as an early symptom.

Wigraine combines ergotamine tartrate and caffeine to relieve vascular head pain by vasoconstriction; belladonna alkaloids' antispasmodic action for nausea and vomiting; and the analgesic action of acetophenetidin for residual occipital muscle pain.

Formula: Each Wigraine tablet and suppository contains 1 mg. ergotamine tartrate, 100 mg. caffeine, 0.1 mg. 1-belladonna alkaloids,* and 130 mg. acetophenetidin.

Supplied: Wigraine Tablets, individually foil-stripped and packaged in boxes of 20 and 100. *Wigraine Suppositories,* individually double-wrapped in clear plastic boxes of 12. Send for complete descriptive literature.

Organon Inc.

ORANGE, N. J.

*87.5% hyoscyamine, 12.5% atropine, as sulfates

Hyperfunction and Hypofunction of Endocrine Glands and Diabetes Mellitus

Diabetes may be precipitated by hyperfunctioning tumors of the pituitary, adrenal cortex, adrenal medulla or thyroid, and by hyperplasia of the adrenal cortex and thyroid. After surgical correction of the pathologic condition, the diabetes may or may not be reversible. Instances of reversed diabetes with acromegaly due to spontaneous causes, cobalt treatment, and estrogen therapy are described. The diabetes due to Cushing's syndrome is usually corrected by surgical removal of the tumor or hyperplasia of the adrenal cortex.

The diabetes of one patient with pheochromocytoma who was admitted in diabetic acidosis, disappeared after removal of the pheochromocytoma. Marked hyperglycemia during the administration of cortisone, or permanent diabetes mellitus following the use of exogenous cortisone, is probably due to a pre-existing latent or mild diabetes.

A diabetic glucose tolerance curve in a patient with hyperthyroidism may or may not be due to diabetes mellitus. An elevated fasting blood sugar in the presence of hyperthyroidism is due to diabetes mellitus.

Skillern, P. G. & McCullagh, E. P., *J. Indiana M.A.*, 50:701-709,1957.

Overdigitalization

Usually intravenous digitalis preparations need not be used except in severe heart failure and rapid fibrillation. Fractional doses are usually preferred to the single-dose method.

Dosage must be largely empiric, based on trial and error. Due consideration must also be given to age and general condition, presence of fever, hepatic or renal disease, or thyrotoxicosis. Possible additive effects of other drugs being given, such as calcium, epinephrine, or procaine, should be considered.

The patient should be told the symptoms of toxicity and urged to report them as soon as they are noticed. Early symptoms, such as ocular disturbances, should not be disregarded.

The doctor should select several agents, e.g. one for oral and another for intravenous use, study them thoroughly and gain adequate experience in their use. Careful observation of response to medication should replace "average" dosage requirement.

Requirements for digitalis may change because of changes in the electrolyte balance; this is frequently the case during the course of therapy for congestive heart failure. Metabolism of K is profoundly affected by digitalis therapy, and the administration of K salts may lessen the patient's need for digitalis.

"All of us were going through Marian's 'change of life.'"

Menopause for Marian was more than just "change of life," for it was accompanied by a sudden and radical change in behavior. Gloomy and morose, she retreated from friends... her crying spells and panicky states increased alarmingly... and no amount of reassurance seemed to help.

But yesterday, after so many months apart from society, Marian came back to the bridge club–a new woman.

Pacatal, 25 mg. t.i.d., brought her out of her menopausal depression.

For patients on the brink of psychoses, Pacatal provides more than tranquilization. Pacatal has a "normalizing" action; i.e., patients think and respond emotionally in a more normal manner. To the self-absorbed patient, Pacatal restores the warmth of human fellowship... brings order and clarity to muddled thoughts... helps querulous older people return to the circle of family and friends.

Pacatal, in contrast to earlier phenothiazine compounds, and other tranquilizers, does not "flatten" the patient. Rather, he remains alert and more responsive to your counselling. But, like all phenothiazines, Pacatal should not be used for the minor worries of everyday life.

Pacatal has shown fewer side effects than the earlier drugs; its major benefits far outweigh occasional transitory reactions. Complete dosage instructions (available on request) should be consulted.

Supplied: 25 and 50 mg. tablets in bottles of 100 and 500.

Also available in 2 cc. ampules (25 mg./cc.) for parenteral use.

back from the brink with **Pacatal®**

Brand of mepazine

WARNER-CHILCOTT

100 YEARS OF SERVICE TO THE MEDICAL PROFESSION

Death has followed maintenance therapy of digitalis after profuse diuresis.

The optimum dosage insures no overlapping of effect from one dose to the next, yet keeps the patient fully digitalized.

Anorexia and nausea are early and frequently observed symptoms of overdigitalization. Severe intoxication can occur without subjective indication.

Blurring, dancing, or flickering dots before the eyes, or color aberration are observed in 25% of these patients. Inquire specifically for these indications in suspected overdosage.

Pains in the face and upper extremities, disorientation, or delirium may predominate. The earliest evidence of toxicity may be ECG change; but this has been entirely lacking in some severe cases of poisoning.

Usually, withdrawal of the drug is sufficient. Several days may elapse before symptoms disappear, or, in the case of long-acting agents such as digitoxin, two or three weeks. If digitalis is resumed, it should be used only after all severe symptoms have abated, and smaller amounts should be given.

Dehydration may be combated by the parenteral administration of fluids. Attempts should be made to overcome any known electrolyte imbalance.

Heart Bull., 5:62-65,1956.

Effect of a Gluten-Free Diet in Idiopathic Steatorrhoea

Remarkable benefit was achieved by a gluten-free diet in two adolescents with established steatorrhoea and in one woman, 40 years of age, in whom the diagnosis had been made eight years previously.

Two of the patients were adolescents in whom the defect had existed since early childhood. The third was an adult in whom the disorder had probably existed for many years. The major disturbances in these patients were folic-acid deficiency and iron-deficiency (one); severe retardation of general development and puberty changes, and coeliac rickets (one); and skeletal decalcification (one - adult).

The exclusion of gluten from the diet corrected the defect in fat absorption and the other disturbances, with the exception of the iron deficiency which was shown to be due to "non-gluten-induced," iron-absorption defect. The two adolescents showed "flat" oral glucose-tolerance curves which were not influenced by the exclusion of gluten.

The dietary regimen in cases 1 and 2 was imposed for 15 and 24 months respectively. In both cases features attributable to relapse appeared 15 months after a normal diet was resumed, and at this stage defective absorption of fat was again shown to be present.

Brown, A., *Brit. M.J.*, 5040:337-338,1957.

Sodium Liothyronine in Metabolic Insufficiency Syndrome and Associated Disorders

The effects of sodium liothyronine have been determined in 51 patients with metabolic insufficiency and in 29 with specific metabolic disorders. The results have shown a relationship between metabolic insufficiency and many common disorders—fatigue in 88%, obesity, menstrual irregularities, dry hair and skin, and nervous or emotional disorders in more than 50%. Infertility, obesity, and various gynecologic disorders were shown to be relieved by metabolic stimulation. Good to excellent responses were elicited in 46 of 51 (90%) of the patients with metabolic insufficiency. Of this same group, 36 patients had previously been treated with desiccated thyroid, thyroglobulin, or thyroxine. Only three (6%) had shown good to excellent response.

Included in the study also were 29 patients with the following diagnoses; female sterility, male infertility, gynecologic disorders, obesity, and intractable salt and water imbalance. Responses were good to excellent in 25 of these 29 patients.

Fifteen percent of these patients were referred by psychiatrists. Another 5% had undergone psychotherapy or analysis, and one had been given electroshock therapy. Most of these reported considerable relief of the mental and emotional symptoms. Increasing the metabolic rate makes the patient more capable of facing daily tasks.

Side reactions of nervousness, insomnia, and tachycardia were noted in four of the total of 80 patients. It is concluded that sodium liothyronine is a highly effective and safe therapeutic agent for treating patients with metabolic insufficiency and other nonmyxedematous metabolic disorders.

Morton, J. H., *J.A.M.A.*, 165:124-129,1957.

Cholesterol and Beta Lipoproteins of Normal Subjects and Those with Coronary Heart Disease

The serum lipoproteins and cholesterol have been determined for 1968 adults who appeared well; for 273 men with evidence of myocardial infarction in the past; for 141 men with definite angina pectoris, and for 23 women with evidence of myocardial infarction.

The most characteristic attribute of serum lipid measurements in adults of similar age and sex and clinical status is their large variability. Among well people under 50, men show higher levels of all these serum lipids than do women. Women show a steady increase with age throughout the age span studied. After 60, the serum cholesterol levels of women exceed those of men.

The 273 men with myocardial infarction had serum cholesterol and lipoprotein levels which were *higher* than those for healthy men.

The serum lipid levels of 23 women with myocardial infarction were *similar* to those of men with the same disease.

The serum lipid levels of 141 men with angina pectoris only were *intermediate* between those of well men with myocardial infarction.

The small size and great variability of these differences of serum lipid levels between well men and women and those with angina pectoris or myocardial infarction make clinical application of these tests impossible.

The measurement of total serum cholesterol remains the most practicable laboratory measurement for identification of people with predisposition to coronary heart disease.

Lowry, E. Y., et al., *Am. J. Med.*, 22:605-623,1957.

Determination of a Patient's Digitalis Status

Ernest Page, who precipitated a ventricular arrhythmia by carbohydrate administration to a digitalized patient, felt that this reflected a fall in plasma potassium secondary to fluctuations in the blood sugar level. Tinsley Harrison says that when one is in doubt regarding a patient's digitalis status, administration of a high carbohydrate meal, or of 25 gm. of glucose intravenously, with electrocardiograms at intervals for the next 90 minutes, is likely to settle the question. Frequent premature systoles may be precipitated in the individual who is on the verge of digitalis intoxication.

Beckman, H., *Wisconsin M. J.*, 56:295,1957.

Local Treatment of Snake Bite

Treatment of snake bite by tourniquet, multiple incision, and suction does little to prevent tissue destruction. Since snake venoms produce their harmful local effects through the action of enzymes, cryotherapy is indicated. It prevents rapid absorption of toxins, inhibits bacterial activity, provides ample time for the correct administration of antitoxin, and gives effective anesthesia. The following technique is advised:

1. A ligature just above the point of entrance of the venom. The usual type of tourniquet is not adequate. A hemostat should be used, especially if the bite is on one of the digits.

2. A piece of ice should be placed on the site while a vessel of crushed ice and water is being prepared.

3. The member put in the ice water well above the point of ligation.

4. After at least five minutes, the ligature is removed; the member is kept in the iced water for at least two hours.

5. The member is then packed in finely crushed ice, for a minimum of 24 hours. The bite of a four-foot snake may require three or more days of continuous cryotherapy. If ice is not at hand, bottled gases under pressure are effective—such as those in fire extinguishers, or Frigiderm, ethyl chloride, and others.

6. The patient is kept warm, and after 24 hours, removal of the enzymes from the site will be hastened if he is kept somewhat uncomfortably warm.

7. The warm-up of the wound must be gradual; allow the water to come to room temperature gradually. Appropriate specific and general treatment is carried out.

Stahnke, H. L., et al., *Am. J. Trop. Med.*, 6:323-335,1957.

Influence of Age and Sex on Susceptibility and Clinical Manifestations in Poliomyelitis

The incidence of poliomyelitis in older children and adults is increasing. This is not accountable merely by "aging" of the population or better diagnosis. It is a more severe disease in adults than in children, as shown by the greater frequency of urinary dysfunction, quadriplegia, respiratory paralysis and death in persons over the age of 16 years.

As to poliomyelitis among children, there is a preponderance of males. In adults there is a small excess of females. In adult patients, quadriplegia, respiratory paralysis and death occur more frequently in men than in women.

The person most likely to have the disease in severe form and to die is the man 40 years of age or older; next in order of risk is the male of 16 to 39 years.

Weinstein, L., *New England J. Med.*, 257:47-52,1957.

Changing Indications for Cesarean Section

Cesarean sections have steadily increased during the past 15 years. For 1,000 consecutive cesarean sections performed during a period of 13 years in a hospital at a large urban center, the most frequent current "indication" was the "repeat" operation. In the treatment of placenta previa, the use of cesarean section has increased fourfold.

Tuberculosis and cardiac disease have disappeared from the list of indications.

Trial of labor is now more frequently allowed for suspected fetopelvic disproportion and the elderly nullipara.

Weber, L. L., *Pennsylvania M. J.*, 60:371-374,1957.

Diabetic Patients with Myocardial Infarction: The Diagnostic Accuracy of the Electrocardiogram

Data are given on two groups of patients. The first group included diabetic patients who had myocardial infarction observed at autopsy and whose records included electrocardiograms with precordial leads. The second group consisted of 53 consecutive nondiabetic persons who had electrocardiograms, and no infarction was observed at autopsy—all cases in which infarction had occurred prior to the examination. The electrocardiogram was found to be much less accurate in the diagnosis of myocardial infarction in the diabetic than in the nondiabetic; in no instance were the electrocardiograms interpreted as normal in the diabetic group.

Rubin, H. B. & Weiss, M. J., *California Med.*, 86: 254-259,1957.

Codeine Phosphate Or Propoxyphene Hydrochloride

Analyses were made of 1,515 reports from 101 patients who received equal amounts of codeine phosphate and propoxyphene. These reports were obtained through cooperating investigators at seven institutions, at each of which similar results were obtained.

In equal doses by weight, propoxyphene hydrochloride and codeine phosphate were equally effective in reducing the discomfort of chronically ill patients. Differences in effectiveness were observed when 65 mg. of propoxyphene or codeine were compared to 32.5 mg. of the same drugs. Codeine given orally in doses of 65 mg. produced undesirable gastrointestinal effects. Such reactions were observed much less frequently with the same dosage of propoxyphene.

Gruber, Jr., C. M., *J.A.M.A.*, 164:966-969,1957.

briefs: SURGICAL

Management of the Patient with Multiple Injuries

One surgeon cannot attend to multiple trauma as well as a team; this team must have a captain. A general surgeon should be called first as he is the most competent to act as the captain. In most instances, more than one form of treatment can be given at the same time. Without team work important treatment may be slighted or delayed.

Many a patient who has several major fractures has visceral injury which may need priority treatment. Attention to multiple fractures early, before muscle spasm sets in, is much easier than later. All the fractures must be managed simply and efficiently; if possible, two teams of surgeons should work simultaneously on them. The most severe of the fractures produces the most shock and should be treated first. It may be necessary to accept less than complete reduction of some of the fractures at this time, postponing further treatment until the general condition has improved.

In treating any patient who has multiple injuries, there must be no unnecessary moving, and no prolonged operations. In many instances there is a small margin between life and death, and overtreatment may be fatal.

Geckeler, E. O., *Pennsylvania M.J.*, 60:632-634,1957.

Affections of the Temporomandibular Joint

The temporomandibular joint is one of the few with articulating surfaces *not* covered by hyaline cartilage. A disc or meniscus is interposed between the temporal bone and the mandibular condyle, dividing the articular space into an upper and lower compartment. In the upper compartment, gliding or translatory movements of the meniscus on the temporal bone takes place, while in the lower compartment there is an eccentric hinge movement of the condylar head in relation to the meniscus. One hundred fifty cases were seen in the 5 years prior to April, 1953. Of these, women were affected 3 times as often as men. Few have severe initial symptoms. Unilateral or bilateral "clicking" in the joint without pain was the most frequent complaint, accounting for 30% of the cases, while 27% had a "click" and pain. The pain was either momentary, sharp and stabbing; a steady dull kind of neuralgia, or a gnawing soreness of the joint. Only 9 complained of deafness, tinnitus, lingual or other symptoms. There was some interference with free movement of the jaw—limited opening, occasional locking or recurrent subluxation. Neckache or difficulty in swallowing were rare symptoms. In 23

urised®

Attacks the Cause
Alleviates Pain
Arrests Infection

Patients—in all age groups—respond readily to the 3 "A"s of URISED. It is effective in virtually all forms of urinary disturbances—even those complicated by serious systemic disease.[1]

ATTACKS THE CAUSE—In minutes, URISED attacks both primary causes of pain and dysfunction: (1) smooth muscle spasm; (2) incidence of infection.

ALLEVIATES PAIN—Prompt antispasmodic action relaxes painful smooth muscle along the urinary tract, brings quick relief to the distressed patient.

ARRESTS INFECTION—Rapid antibacterial action reduces irritation, even overcomes infections previously resistant to antibiotics and sulfonamides.

Prescribe URISED with confidence to relieve frequency, burning, urgency, dysuria, promote rapid restoration of normal urinary function in all urinary affections of all age groups.

1. Strauss, B., Clin. Med., Vol. IV, No. 3, 1957

CHICAGO PHARMACAL COMPANY
Chicago • San Francisco

cases there was fifth nerve neuralgia with no other symptoms.

Thirty-seven percent of the cases started suddenly; the remainder had a gradual onset. Only 20% could be attributed to extrinsic injury.

In trauma, if the teeth are apart at the moment of impact, the lateral pterygoid tenses to take the strain and the fibers of the upper head may dislodge the disc anteromedially in relation to the condyle or else may tear away from the disc so that it tends to drift distally in the joint.

Sometimes the onset of symptoms is clearly connected with yawning, laughing or eating. A sudden sharp pain in the joint may be followed by the feeling of something in the way preventing full movement, and often self-manipulation restores normal function on the first few occasions. The joint remains stiff and tender for some days, indicating a synovitis. If the jaw can be rested at this stage repair can take place. This should be immediately followed by correction of any occlusal deformity. If neglected, repeatedly intrinsic trauma causes degenerative changes in the joint.

In all cases of malocclusion the aim is to restore the occlusion and to maintain it in equilibrium so that the teeth can grind freely in all directions.

Injections of various substances into the joint have been tried for mild degrees of osteoarthritis, or when pain or obstruction to movement is not improved by bite rehabilitation. Surgery is required in a decreasing percentage of cases: 20 had meniscectomy and 1 condylectomy. Heat and muscle rehabilitation is of great help in many cases; besides its local effect, the patient feels that something active is being done.

Hankey, G. T., *Proc. Royal Soc. Med.*, 49:983-999, 1956.

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milkinol®

Solves the Constipation Problem

...for all age groups

NON-LAXATIVE CONSTIPATION CORRECTANT

Instant aqueous-mixing, self-emulsifying liquid petrolatum fortified with potent penetrating and dispersing activity softens hardest stools, provides prompt relief with—

PENETRATION: Dioctyl sodium sulfosuccinate promotes penetration of hydro-lipophilic emulsion deep into hard, dry rectal contents.

DISPERSION: Uniformly distributed emulsion of tiny, non-absorbable oil globules and water permeates entire fecal mass.

PLASTICITY: Unlike water, which is resorbed in the rectum, non-absorbable hydro-lipophilic MILKINOL is retained in the stool to assure normal evacuation.

UNIQUE EFFECTIVENESS OF MILKINOL

Let us prove to you, in your own practice, that MILKINOL solves the constipation problem for your patients—even those with chronic constipation or impactions of long standing.

Send for your samples and literature today!!

Prescribe with Confidence

KREMERS URBAN COMPANY MILWAUKEE 1, WISC.

Ethical Pharmaceuticals Since 1894

Genito-Urinary Complications in Ano-Rectal Surgery

At the central point of the perineum, a fibromuscular node serves as a point of origin for the external and internal anal sphincters and the bulbocavernous muscle. It also is a point of insertion for the recto-urethral and superficial transverse perineal muscles, and for the levator fibers which support the prostate. Pain in the anal area is aggravated by urinating. The patient will not try hard because it is too painful: thus an acute urinary retention.

Insert a #18 F. Foley catheter and leave it in for four or five days. The irritation subsides, and the activity of impulses through the reflex is reduced. One may or may not irrigate the bladder with normal saline once or twice each day while the catheter remains in—not using boric acid solution. Hot sitz baths while the catheter is inlying speed the healing.

Gantrisin®, four times daily, will help keep down urinary infection, continued for two or three days after the catheter has been removed. Usually these patients will void after this treatment unless the prostate is too large. Then prostatectomy may be indicated.

In a series of cases of abdomino-perineal resection, 20% either had complete urinary retention, a high residual urine, or a very weak stream. Most of these patients had either prostatic hypertrophy or a median bar, but some had no obstruction at the bladder outlet.

A few patients developed urinary retention after the removal of the peripack. Those who left the catheter in for two weeks after operation had more patients void immediately. In those who never regained the power to urinate voluntarily, it was necessary to do a prostatectomy.

Cross, R. R., *Am. J. Proctology*, 8:140-142,1957.

Management of Facial Injuries

The increasing incidence of automobile accidents results in the delivery of many patients with facial injuries to the hospital emergency room. All such injuries should be carefully evaluated before repair is started. Head, chest and abdominal injuries take priority. Facial fractures should be detected and treated within 24 to 48 hours.

Establish hemostasis and a good airway in the emergency treatment of facial injuries. In automobile accidents, always rule out the possibility of head, chest, or abdominal injuries. Local anesthesia is preferable in the early repair of facial injuries. Facial fractures should be identified and treated early.

Paletta, F. X., *Mississippi Valley M.J.*, 79:150-153, 1957.

Results of Treatment in 1,432 "Old" Closed and Open Fractures of the Shafts of the Leg Bones

An "old" fracture is one admitted to hospital more than 14 days after a closed, and more than 24 hours after an open fracture. It was possible to compare the results of various forms of treatment in 480 of 863 patients with old closed, and in 433 of 568 patients with old open, fractures. The best results were obtained in the old closed fractures of the leg by primary traction with subsequent immobilization in plaster, and in the old open fractures by primary traction and reduction, with immobilization in plaster. Primary surgical operations produced the poorest results in old fractures whether closed or open. The correct weight is of decisive importance during traction.

Jahna, H. & Scharizer, E., *Monatsschr. Unfallh.*, 54: 207-227,1957.

Treatment and Results in 1,130 Fresh Closed Fractures of the Shafts of the Leg Bones

The 1,130 new, closed fractures of the leg reviewed in 1,123 patients were: 311 isolated fractures of the shaft of the tibia and 819 fractures of both bones of the leg. The majority (970 patients) received conservative therapy either with a plaster cast or with extension and subsequently with a walking cast. Transfixation was used in 65 patients, medullary nailing in 65 and osteosynthesis in 17. Detailed analysis revealed the superiority of conservative over operative treatment.

Fifteen deaths occurred during the period of hospitalization in the 1,123 patients, but only three of the deaths resulted (indirectly) from the fracture, two being caused by pulmonary embolism and one by encephalitis. Two amputations were necessary, one because of infection after medullary nailing, the other because of gangrene of the foot in a patient hospitalized on the sixth day after fracture, when gangrene had begun. Pseudarthrosis developed in two patients. In 40 healing was retarded, an average of 201 days was required for healing.

A total of 477 patients (45%) were reexamined from two to 25 years after the fracture was sustained. Hard labor was being performed by 170—30% of the re-examined patients. Only 10 patients had found it necessary to change their occupation, and the average age of these was over 50 years. The gait was normal in 400 of the 477. The 63 whose walking capacity was impaired had an average age of 59 years. Fifty-five of the 554 patients who sustained their fractures in their occupations received a permanent disability pension, and 34 of these were over 50 years of age.

Ender, J., et al., *Monatsschr. Unfallh.*, 54:14-92,1957.